Policy and fertility.
An empirical study of some mechanisms assumed by policies

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Canada, as most Western countries, has been experiencing, over the last decades, a low fertility regime that does not mitigate the ageing of its population and does not allow maintaining its size over the long run (Ram, 2003). This situation is well known and its effects on the economy and on the sustainability of social programs, including health insurance and pension plans (Denton and Spencer, 2000). These consequences are currently addressed by promoting immigration and this approach can indeed be enough to keep the Canadian population increasing (Statistics Canada, 2005). The alternative or complementary strategy is obviously to favour fertility.

Nowadays, few Western countries support openly pro-birth policies and recent studies appear to show the effects such policies are weak (Gauthier, 1996) or very limited (Blanchet and Ekert-Jaffé, 1994). Socio-cultural explanations lead to believe that fertility can only increase if the currently prevailing preferences structure changes and become more child oriented. Economic explanations lead to believe that reducing the cost of children could foster fertility.

The study of public policies *as a whole* tends to show that they have an effect on individual choices and on the participation of women in the workforce, union formation and fertility. The most complete synthesis on this issue has been developed by G. Esping-Andersen and is exposed in a series of works published over the last decade (Esping-Andersen, 1998, 1999,

2002). Esping-Andersen analyses the relations between the State, the labour market and the family, and specifically the relationships between social policies, family policies, employment policies, unemployment, poverty, women's work and fertility. He distinguishes three broad models of policies: the *familialistic* model, common in continental Europe, the *liberal* model, typical of Anglo-Saxon countries including Canada, and the *Scandinavian* model. The familialistic model is based on the willingness to support the traditional male breadwinner family. The liberal model, of which the purest form is found in the United States, is based on the belief that market is the best way by which individual and families can get the resources they need. The Scandinavian model is based on the willingness to support families in which both parents work, to reduce the uncertainty and social risks to which people are subject, and to reduce the costs associated with having and raising children. The Scandinavian model has a long history which goes back to the 1930s and the pioneering work by Gunnar Mirdal (1940) and Alva Myrdal (1941), which developed the idea that in a democratic society based on market economy, the only way to address low fertility was by mitigating the adverse effects that industrialization and market economy had on the ability of couples to cope with the cost of child raising through family policies imbedded in larger social policies.

Outside Scandinavia, and certainly in countries whose welfare state follows the liberal model, the common wisdom is that choosing to live with someone and choosing to have children are intimate decisions in which democratic States should not interfere. Paradoxically, policies do have an effect on these intimate decisions of the individuals. This effect may go against the intentions of these policies, as is now the case in countries in which prevails the familalistic model, where fertility is low or even lowest-low. This effect may have no relation with the intentions of the policies, as in countries in which prevails the liberal model. This effect may be the desired result of the policies, as is the case in the Scandinavian countries.

Theory, previous research and hypotheses

It seems reasonable to conclude from this discussion that the State can hardly have policies free from effect on fertility, that in most Western countries fertility cannot rise to replacement level without some policy aimed at fostering it, and that in democratic countries, the only legitimate kind of such policies are those that make the choice of having children economically neutral or, at least, reduce the economic burden of having and raising children. In other words, this means policies which allow peoples to have the children they want to have and do not have because of the cost of children or help balancing the demands of work and family responsibilities. In today's context, this means supporting families in which both parents work and ensure that day-care centres, education, healthcare, additional housing costs, etc. have little or no impact on the family budget. This means also reducing the uncertainty that stems from the risk of poorly compensated unemployment. Regardless of the many discussions that such a set of policies could trigger, considering them raises an essential empirical question: can such a set of policies have, in Canada, the effect on fertility that it seems to have had in some other countries?

No clear answer has yet been provided to this question. Studies on the relation between welfare models and fertility are based primarily on the comparative analyses of aggregate data (e.g Esping-Andersen, 1998, 1999; Gauthier and Hatzus, 1997). They compare the countries at the aggregate level, not the processes that exist within each country. Most of recent Canadian studies on the relation between public policy and fertility use aggregated or cross-sectional data (e.g. Lefebvre, Brouillette and Felteau, 1994) or methods that do not allow for statistical controls (e.g. Milligan, 2002). Very few studies have been realised using individual longitudinal data whereas analyses based on such data are the only way to study properly processes that lead to or not to an event such as the birth of a child. Beaupré and Turcotte (2005) study the effect of the employment of women on their fertility with such data, but the retrospective biographical

investigation they use (GSS 2001) contains no information on the spouse's employment and on income. Bingoly-Liworo and Laplante (Submitted) use data from a prospective household survey (SLID) to assess the effect of women's employment status and job characteristics on their fertility, but their results do not lead to any conclusion about the decision process assumed by the social policies we are interested in.

The purpose of this study is to check whether, nowadays, within the Canadian population in their child-bearing years, the relation that is assumed to exist between *the factors which policies could change* and fertility exist really. Our research program covers the processes that lead to the birth of the first, the second and third child; in this paper, we limit ourselves to the process which leads to the first birth. We examine the influence of policies as they exist and especially the *role of uncertainty and costs* whose impact could be reduced if other policies were implemented. We try to assess how the resources of individuals and families reduce the assumed effect of uncertainty and costs on fertility.

In order to do so, we focus our analysis on couples in which both partners are employed before the birth of their first child. This choice is motivated by conceptual and methodological considerations. In Canada, most children are born from parents who live together, whether as spouses or cohabiting partners. Children born to lone women are comparatively few and the decision process that leads these women to have a child is certainly different from the one which govern the decisions of couples. Controlling for this difference through a binary variable would miss the point and estimating all effects as conditional on this difference would be ridiculous. A similar reasoning lead us to further limit our study to the subpopulation of couples in which both partners are employed. In Canada, according to data from SLID, 85% of childless couples in their child-bearing years are made of two employed partners. Childless couples in their child-bearing years are few and again, the decision process that leads these couple to have a child is likely to be

different from the one which govern the decisions of couples in which both partners are employed. We further limit our focus to the couples in which none of the partner is self-employed. Self-employed people are a minority and many of the employment characteristics we need to measure risk and costs are not collected from self-employed people in Canadian household surveys.

Method

Data

The *Survey of Labour and Income Dynamics* (SLID) is a household panel survey in which members of the sampled households are interviewed each year over a six-year period. It is the only Canadian data source that allows studying the relationship between demographic events, employment and income at the family level and in a longitudinal perspective.

We use the data from the two most recent panels: the 1999-2004 panel and the 2002-2007 panel. We use the subsample of couples whose two partners live the same household and where the woman is as a longitudinal individual, that is, in SLID lingo, an individual who belongs to a sampled household at the beginning of the first year of reference of the panel and is therefore tracked throughout the whole six-year period of the panels, even if she moves to different quarters or leave the sampled household in which she was living at the beginning of the first year of reference of the panel. Given that we are interested in people in their childbearing years, we select only couples in which the woman is aged between 16 and 49 years at least during a portion of the period during which she is under observation. Given that we are studying the process leading to the first birth, we select only couples in which the woman never had a child. For reasons detailed in the previous section, we further restrict the analysis to couples in which both partners are employees, thus excluding couples in which at least one partner is either inactive or

self-employed. Finally we exclude couples whose combined after-tax income is over 150,000 CAD as they are few and outliers.

SLID collects information that allow building retrospective biographies of union formation and breakdown for all unions which began before the individual entered the panel, with the date of each event and the age of the individual when the event occurred. It also collects information that allows tracking the dissolution of current unions and the formation of new unions once the sampled individuals are under observation. We use this information to select the subsample we are interested in and build the risk group.

SLID does not collect a genesic history and not even a true history of births, but it asks women if they ever had a child before entering the panel, their age when they gave birth to their first child if they did. SLID also collects the date of birth of all the individuals, longitudinal or not, including those who start to live with a longitudinal individual during the panel, such as new born children. This information allow us to select women who never had a child before they became under observation and compute their age at the time they give birth to their first child if this event occurs while they are under observation.

SLID collects detailed information about employment, income sources, benefits and taxes from all longitudinal individuals and all other individuals who live with a longitudinal individual. Depending on its nature, this information is available on a weekly, monthly or annual basis. We use this information to build the build the variables we need to assess our hypotheses about the effects of work, income and policies on fertility.

Given that decision to have a child may be depend not only on the actual socio-economic condition of the couple but also on expectations about the stability of this condition, we control for the prevailing economic context of each partner using the current local unemployment rate by

age and sex and for entitlement to unemployment insurance benefits, which depends on the local unemployment rate, as done in Martel, Laplante and Bernard (2005).

Variables and operationalisation of hypotheses

We operationalise our general hypothesis by estimating the effect of a series of labour market related variables and of state intervention related variables on the hazard of having the first child. Given that these variables refer either to the condition of the female partner, of the male partner or to the couple or family, we review according to the unit for which each of them is defined.

Female partner's labour market related variables include job status (temporary or permanent), job sector (private or public), work schedule (full time or part time), union protection, employer's pension plan, after tax income and unemployment rate (current local unemployment rate by age and sex). Female partner's state intervention related variables include entitlement to maternity leave, entitlement to maternity benefits and amount of anticipated maternity benefits. In most provinces and over the period under study, entitlement to maternity benefits was linked to entitlement to unemployment insurance benefits; as a consequence, the effect of entitlement to unemployment insurance benefits cannot be estimated separately from entitlement to maternity benefits for women.

Male partner's labour market variables are the same as for female partner. State intervention related variables are different: they exclude entitlement to maternity leave, entitlement to maternity benefits and anticipated maternity benefits, but include entitlement to unemployment insurance benefits. Paternity leave was an exceptional benefit during the period we are studying. In January 2006, the province of Quebec introduced a new parental insurance program that allows couples to share parental leave and parental benefits among both parents.

This important change occurred at the end of the period we are studying and the effect of this new policy cannot be included in our models.

In addition, we control for the highest level of education of both partners (high school or less, non university postsecondary diploma, university degree or certificate).

Two labour market related variables are defined for the couple rather than for the individuals: the family's adjusted after tax total income and the number of health benefits offered by employers (none, one or two, three). One state intervention related variable is defined for the couple: the expected increase in refundable tax credits following the birth of a child. We control for the type of union (marriage or cohabiting union).

Variables that reduce uncertainty in any way are assumed to have a positive effect on the birth of the first child. Thus having a permanent job rather than a temporary one, working in the public sector rather than in the private sector, being protected by a union and a collective agreement and benefiting from an employer's pension plan are all assumed to have a positive effect. Entitlement to maternity leave and entitlement to maternity benefits are also assumed to have a positive effect, as is entitlement to unemployment insurance benefits. The hazard of having a first child is assumed to increase with the amount of expected maternity benefits and with the amount of expected additional refundable tax credits following the birth of a child. It is also expected to increase with net income, at least up to a point; we estimate these amounts using an updated version of the software developed and maintained by K. Milligan (2002). High income protects from social risks by itself, but this effect is likely to reach a maximum at some level of income: people who have little income may postpone or give up having a child because of the cost of a child, but people who have "enough" income will base their decision on some other criterion. The hazard of having a first child is assumed to decrease as unemployment rate

increases given that the risk of losing one job usually increases with it. Last but not least, married couples are expected to have a higher hazard than cohabiting couples.

Fifty-five per cent of the couples in our sample come from panel 3 and 45% from panel 4. Table 1 provides a description of the partners whereas Table 2 provides a description of the couples. Most of our covariates are time-varying. Given that the estimation of the effects of such variables is based on time spent at risk in each of their categories, we based their description on time spent at risk and proportion of total time spent at risk rather than on absolute and relative frequencies at the beginning of observation or at chosen durations.

Model

The hazard of giving birth is known to increase and then decrease over the childbearing years. Proportional parametric models do not easily accommodate such a pattern of time-dependence. The Cox model does not allow graphing the hazard function directly. We estimate the effects of the independent variables on the hazard of giving birth to the first child using proportional hazards models in which the baseline hazard is modelled as a series of cubic splines (Royston, 2001; Royston and Parmar, 2002). The coefficients associated with the independent variables have the same properties as those from more conventional proportional models and can be interpreted in the same way. Given that, in such models, the baseline hazard is an algebraic function, it can be graphed without resorting to empirical smoothing.

Some continuous independent variables whose effects are likely to be non linear, such as income, are themselves modelled as cubic splines (Royston and Sauerbrei, 2007). Their effects are best understood using graphs.

Given that we are using data from six-year panels, no woman can be observed over the entire age range of childbearing years. We build the risk group using delayed entry, each woman entering the risk group at the age she was when she entered the panel. The resulting baseline

hazard is a continuous life table based on averaging events occurring over nine calendar years and time at risk, or exposure, spread over nine calendar years. It can be interpreted as the baseline hazard of a fictitious cohort reflecting the process leading to having the first child among Canadian couples made of two employed partners as it existed from 1999 to 2007. Laplante, Santillán and Street (2009) provides examples of the use of such an approach in family demography.

SLID's sample design involves stratification and clustering. Complete missing data is imputed using the hotdeck method, which amounts to transferring the sampling weight of a missing individual to some other individual assumed to be similar. Final weights involve several adjustments, among which calibration is not the least. Estimates are weighted using the final weights provided by Statistics Canada. Conventional standard errors relying on the assumption of simple random sampling are obviously not well suited for such data. We estimate the standard errors through resampling using a set of 1,000 bootstrap weights provided by Statistics Canada (Rao and Wu, 1988).

Results

Table 3 reports the effects of the female partner's characteristics on the hazard of having the first child. Having a permanent rather than a temporary job and after tax income are the only variables which have a significant gross effect. Net effects, as they are reported in Model 1 to 3, show that job status and after tax income remain significant. For a woman, having a permanent rather than a temporary job increases threefold the hazard of giving birth to the first child. The net effect of the expected amount of maternity benefits is significant, whereas the effects of entitlement to maternity leave and of entitlement to maternity benefits never become significant.

Figure 1 graphs the hazard of having the first child as a function of the female partner's after tax income. The hazard increases and peaks at about 12,000 CAD and decreases steadily beyond 20,000 CAD.

Table 4 reports the effects of the male partner's characteristics on the hazard of having the first child. None of them has a statistically significant effect.

Figure 2 graphs the hazard of having the first child as a function of the male partner's after tax income. Although the coefficients associated with the splines which represent this variable in our model are not statistically significant, we thought it could still be interesting to have a look at the shape of this relation. The hazard increases up to 35,000 CAD and remains constant beyond.

Table 5 reports the combined effects of the both partner's and family characteristics. The net effects of the woman's job status and of the expected amount of maternity benefits remain significant. Benefiting from an employer's pension plan has a significant effect for the male partner. The effect of the family's adjusted after tax total income is significant. Married couples have a higher hazard than cohabiting ones.

Figure 3 graphs the hazard of having the first child as a function of the economic family's after tax adjusted income. The relation is not linear and is similar to the relation between this hazard and the female partner's after tax income: the hazard increases and peaks at about 23,000 to 24,000 CAD and decreases beyond.

Figure 5 contains two graphs depicting the relation between the hazard of having the first child according to the amount of expected maternity benefits. The left hand-side graph depicts this relation using the gross effect reported in Table 1; the right hand-side graph uses the net effects from Model 2 in Table 3. The graph based on the gross effect shows little variation. The

graph based on net effect shows a clear pattern: the hazard is basically flat for expected benefits below 300 CAD per week, but it increases steadily beyond that amount.

Figures 6 and 7 are based on additional results not reported in the tables.

Figure 6 depicts the relation between the hazard of having the first child and the amount of the expected additional refundable tax credits that would receive the couple if they had a child. The hazard increases up to approximately 2,000 CAD and decreases beyond that amount.

Figure 7 contains two graphs. The graph on the left hand-side depicts the relation between the hazard of having the first child and the family's after tax adjusted income without any control. The graph on the right hand-side depicts the same relation but net of the effect of the expected additional refundable tax credits that would receive the couple if they had a child. The curve shifts to the right and its maximum is higher in the right hand-side graph. Apparently, the positive effect of the expected additional refundable tax credits on the hazard of having a child is concentrated among the families whose after tax adjusted income lies between 10,000 and 40,000 CAD. Families having an after tax adjusted income lower than 10,000 or higher than 40,000 CAD do not seem to be sensitive to the additional refundable tax credits in making their decision on having their first child.

Discussion and conclusion

According to our results, only a few labour market related variables have a significant effect on the couples' decision to have their first child: a permanent rather than a temporary job for the woman, which increases threefold the hazard of giving birth to the first child; the female partner's after tax income, for which the hazard increases and peaks at about 12,000 CAD and decreases steadily beyond 20,000 CAD; and the male partner having an employer's pension plan. The hazard increases up to 35,000 CAD and remains constant beyond. The male partner's after tax income does not have a significant effect, but the shape of the relation suggest that the hazard

increases up to 35,000 CAD and remains constant beyond. The economic family's after tax adjusted income does have a significant effect and it is similar to the female partner's after tax income: the hazard increases and peaks at about 23,000 to 24,000 CAD and decreases beyond.

We expected the effect of income to reach a maximum at some level because we assumed that people who have little income may postpone or give up having a child because of the cost of a child, but that people who have "enough" income would base their decision on some other criterion. This is not what we find. The shape of the relation between women's after tax income and the decision to have a child suggest that women willingness to have a child increases with their income up to a point, but diminishes beyond that point. Presumably, for women who earn little, an increase in income is seen as a resource that makes having a child more affordable. Women who earn more seem to be deterred to have a child, likely because they are sensitive to the loss in income that would result from raising a child or because they fear the consequences raising a child would have on their career. The shape of the relation between men's after tax income and the decision to have a child fits with our initial hypothesis even though it is not significant; this suggests that the income of the male partner's, whose level and continuity are usually not affected by the birth of a child, helps the couple deciding to have a child up to the point where money is no longer a factor in this decision. The fact that the effect of the male partner's tax adjusted income fails to become significant and that the shape of the relation between the family's after tax adjusted income and the hazard of having the first child is similar to the relation between the female partner's and this hazard leads to the conclusion that the determining labour market related factor in the decision to have a child is likely the women's income. Given the shape of this relation, women who are well integrated in the labour market seem to be facing a tough choice. Most of them are working before having their first child.

Having a *permanent* job seems to be a prerequisite for having a child. Having a *well-paid* job seems to be a deterrent. But in the end, women are apparently the ones who make the decision.

Two state intervention related variables have a definite effect on the hazard of having the first child: the amount of expected maternity benefits and the additional refundable tax credits which would follow the birth of a child. According to our results, the hazard is basically flat for expected benefits below 300 CAD per week, but it increases steadily beyond that amount. This suggests either that women who earn little on the labour market are not very sensitive to maternity benefits or that the low level of compensation as a proportion of previous earnings — roughly 55% during the period we are studying— does not make maternity benefits attractive for women who earn little. Maybe more to the point, our results support the idea that expected maternity benefits have a positive effect of the hazard of having a child when they are substantial.

According to our results, the positive effect of the expected additional refundable tax credits on the hazard of having a child is concentrated among the families whose after tax adjusted income lies between 10,000 and 40,000 CAD. Families having an after tax adjusted income lower than 10,000 or higher than 40,000 CAD do not seem to be sensitive to the additional refundable tax credits in making their decision on having their first child. The effect of this policy seems quite different from the effect of maternity benefits, which increase with women's income. This is likely a consequence of the fact that the additional refundable tax credits amount to a significant proportion of family income only for low-income couples and may be significant only for not too low-income couples whose income does not preclude any reasonable intention of having a child. Maternity benefits, on the contrary, increase as a proportion of a woman's wages up to roughly 40,000 CAD.

The effect of the male partner employer's pension plan is intriguing at first sight, but makes sense in the Canadian context. According to the Canadian constitution, private law is an

exclusive power of the provinces. All Canadian provinces, except Quebec, have received British common law. According to common law, the husband becomes owner of all his wives' property on the day of marriage. Such a rule could not survive in today's world and all common law provinces have replaced it with new rules enacted through statutes. These statutes differ across provinces, but they share one feature.: upon marriage and as long as it lasts, some property of each spouses is deemed family patrimony. What constitutes family patrimony differs across provinces, but in all of them, the family home as well as the value added to registered retirement savings plan (RRSP) and to employer's pension plan during marriage are part of family patrimony and are split equally among the spouses on divorce. Quebec, whose private law is based on French civil law, still offers the two matrimonial regimes typical of contemporary European civil law — partnership of acquests and separation as to property— but has imposed family patrimony to all married couples. Furthermore, in common law provinces, some cohabiting unions are bound by the provisions on family patrimony. This means that for all Canadian married couples and a fraction of Canadian cohabiting couples, up to half of the male partner's RRSP and employer's pension plan legally belong to the female partner. This provision has been enacted by the provincial legislatures in order to compensate upon divorce the partner who is more likely to have accumulated less wealth through labour market participation during the marriage because she was more likely to work less in order to care for the children. As far as we know, this provision had not yet been related to the decision of having children. According to our results, the male partner's employer's pension plan should be ranked among family policies that have an effect on fertility, rather than with labour market outcomes that could have an impact on it. In other words, expected wealth accumulated under RRSPs and pension plans by the male partner could have an impact on the decision by women to have a child.

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Our research program is far from over. Our next step will be looking into the processes which rule the decisions to have the second and their children. We also plan to investigate the variation of these processes according to social and cultural characteristics such as country of birth, ethnic origin, language, religion and province, with a special interest on how much people born outside Canada, who now make up 20% of the Canadian population, differ on these processes from people born in Canada.

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Table 1	Description of the couples at risk of having their first child			
	Female partner		Male partner	
Time-varying variables	Time at risk	Proportion	Time at risk	Proportion
Job status				
Permanent	3139227	.87	3236434	.89
Temporary	477591	.13	380385	.11
Job sector				
Public	998030	.28	868121	.24
Private	2618789	.72	2748697	.76
Union protection				
Yes	1172998	.32	1235951	.34
No	2443820	.68	2380867	.66
Work schedule				
Full time	2887301	.80	3362656	.93
Part time	729518	.20	254162	.07
Employer's pension plan				
Yes	1957823	.54	2135798	.59
No	1658995	.46	1481021	.41
After tax income (CAD)				
From 0 to less than 10,000	255513	.07	93490	.03
From 10,000 to less than 25,000	1396359	.39	845931	.23
From 25,000 to less than 40,000	1360163	.38	1406696	.39
From 40,000to less than 55,000	444927	.12	819307	.23
55,000 or more	159855	.04	451393	.12
Unemployment rate				
From 0% to less than 5%	685628	.19	903253	.25
From 5% to less than 7.5%	1923808	.53	1329209	.37
From 7.5% to less than 10%	459811	.13	914086	.25
10% or more	547571	.15	470269	.13
Entitled to maternity leave				
Yes	3333428	.92		
No	283390	.08		
Entitled to maternity benefits				
Yes	3354531	.93		
No	262288	.07		
Expected weekly maternity benefits (CAD)				
From 0 to less than 200	658224	.18		
From 200 to less than 350	1197099	.33		
350 or more	1761496	.49		
Entitled to unemployment insurance benefits				
Yes	3285665	.91	3376391	.93
No	331154	.09	240427	.07
Highest level of education				
High school or less	977155	.27	1269765	.35
Post secondary diploma	1419442	.39	1382707	.38
University diploma	1220222	.34	964347	.27
Female partner's age group				
16-24	620503	.17		
25-29	1115897	.30		
30-34	771349	.21		
35 49	1109069	.31		
Total time at risk	3616819		3616819	

Time at risk and proportions are weighted.

Table 2	**Description of the couples at risk of having their first child**	
Fixed variable	**Frequency**	**Proportion**
Panel		
Panel 3 (1999-2004)	955	.55
Panel 4 (2002-2006)	773	.45
Time-varying variables	**Time at risk**	**Proportion**
Number of health benefits offered by employers		
Three benefits	2940557	.81
One or two benefits	375724	.11
No benefit	300538	.08
Economic family's adjusted after tax total income (CAD)		
From 0 to less than 25,000	400238	.11
From 25,000 to less than 50,000	1982295	.54
From 50,000 to less than 75,000	1007268	.28
75,000 or more	227017	.07
Expected additional refundable tax credits following the birth a child (CAD)		
From 0 to less than 500	686944	.19
From 500 to less than 1000	992004	.27
From 1,000 to less than 1,500	1038617	.29
From 1,500 to less than 2,000	453410	.13
2,000 or more	445842	.12
Type of union		
Marriage	2137460	.59
Cohabiting union	1479358	.41
Total time at risk	3616819	

Frequencies and their proportions are not weighted. Time at risk and its proportions are weighted.

Table 3	The hazard of having the first child Female partner			
	Gross effects	**Model 1**	**Model 2**	**Model 3**
LABOUR MARKET				
Job status [Temporary]				
Permanent	2.6293**	2.9270**	2.9321***	2.9864***
Job sector [Private]				
Public	1.0684	1.276	1.2787	1.2578
Union protection [No]				
Yes	1.1939	1.19	1.2113	1.2385
Work schedule [Part time]				
Full time	0.9023	1.1547	1.098	1.1029
Employer's pension plan [No]				
Yes	1.2785	1.4316	1.387	1.4001
Logarithm of after tax income				
s_1	0.8356	0.6268**	1.5247**	1.5333**
s_2	1.4368*	1.4716*	0.8144	0.8153
STATE INTERVENTION				
Entitled to maternity leave [No]				
Yes	2.1144	1.9686		
Entitled to maternity benefits [No]				
Yes	1.8097	1.7345		
Expected maternity benefits				
s_1	1.0465		0.4738***	0.4664***
s_2	0.9462		1.9093**	1.9532**
OTHER				
Highest level of education [University diploma]				
High school or less	1.0633			0.9768
Postsecondary diploma	1.0293			0.8508

Coefficients are reported as hazard ratios (a.k.a. relative risks).
The logarithm of the female partner's after tax income is modeled using cubic splines with one knot at 10.16.
The logarithm of the economic family's adjusted after tax total income is modeled using cubic splines with knots at 10.46 and 10.8.
Expected maternity benefits are modeled using cubic splines with one knot at 342.9 CAD.
Statistics Canada, (SLID 2006)
* p<0.1; ** p<0.05; *** p<0.01

Table 4	The hazard of having the first child Male partner			
	Gross effects	**Model 1**	**Model 2**	**Model 3**
LABOUR MARKET				
Job status [Temporary]				
Permanent	1.3502	1.2139	1.135	1.1413
Job sector [Private]				
Public	0.8203	0.7044	0.6856	0.6795
Union protection [No]				
Yes	1.1771	1.3044	1.2936	1.3001
Work schedule [Part time]				
Full time	1.3724	1.2288	1.0456	1.0551
Employer's pension plan [No]				
Yes	1.207	1.1711	1.0711	1.0709
Logarithm of after tax income				
s_1	1.2968		1.2375	1.2363
s_2	1.1608		1.1399	1.1462
STATE INTERVENTION				
Entitled to unemployment insurance benefits [No]				
Yes	1.7384		1.4869	1.4873
OTHER				
Highest level of education [University diploma]				
High school or less	1.0032			0.9669
Postsecondary diploma	0.9968			0.9502

Coefficients are reported as hazard ratios (a.k.a. relative risks).
The logarithm of the male partner's after tax income is modeled using cubic splines with one knot at 10.39
The logarithm of the economic family's adjusted after tax total income is modeled using cubic splines with knots at 10.46 and 10.8
Statistics Canada, (SLID 2006)
* p<0.1; ** p<0.05; *** p<0.01

Table 5	**Results from hazards models for a first birth**	
	Couple	
	Model 1	**Model 2**
LABOUR MARKET		
Female partner		
Job status [Temporary]		
Permanent	2.8746**	2.9289**
Job sector [Private]		
Public	1.0507	1.2337
Union protection [No]		
Yes	1.1527	1.1505
Work schedule [Part time]		
Full time	0.8023	0.9442
Employer 's pension plan [No]		
Yes	1.0578	1.1343
Unemployment rate		
s_1		1.2825
s_2		1.0052
Male partner		
Job status [Temporary]		
Permanent	0.9545	1.0463
Job sector [Private]		
Public	0.6948	0.7297
Union protection [No]		
Yes	1.2954	1.2916
Work schedule [Part time]		
Full time	1.2858	1.6796
Employer's pension plan[No]		
Yes	1.0853	1.6119*
Unemployment rate		
s_1		0.8237
s_2		0.9156
Family		
Logarithm of family's adjusted after tax total income		
s_1		0.3952**
s_2		2.1437**
s_3		0.7576
Number of health benefits offered by employers [One or two]		
Three benefits	1.1097	1.1941
No benefit	0.531	0.478

Table 5 (continued)	Results from hazards models for a first birth Couple	
	Model 1	**Model 2**
STATE INTERVENTION		
Female partner		
Expected weekly maternity benefits		
s_1	0.9491	1.3400*
s_2	0.923	0.7949**
Male partner		
Entitled to un employment insurance benefits [No]		
Yes	1.6262	2.0403
OTHER		
Female partner		
Highest level of education [University diploma]		
High school or less		1.2922
Postsecondary diploma		0.9355
Male partner		
Highest level of education [University diploma]		
High school or less		0.4914
Postsecondary diploma		0.6981
Family		
Type of union [Cohabiting union]		
Marriage		2.1830***

Coefficients are reported as hazard ratios (a.k.a. relative risks).

The logarithm of the economic family's adjusted after tax total income is modeled using cubic splines with knots at 10.46 and 10.8

Expected maternity benefits are modeled using cubic splines with one knot at 342.9 CAD.

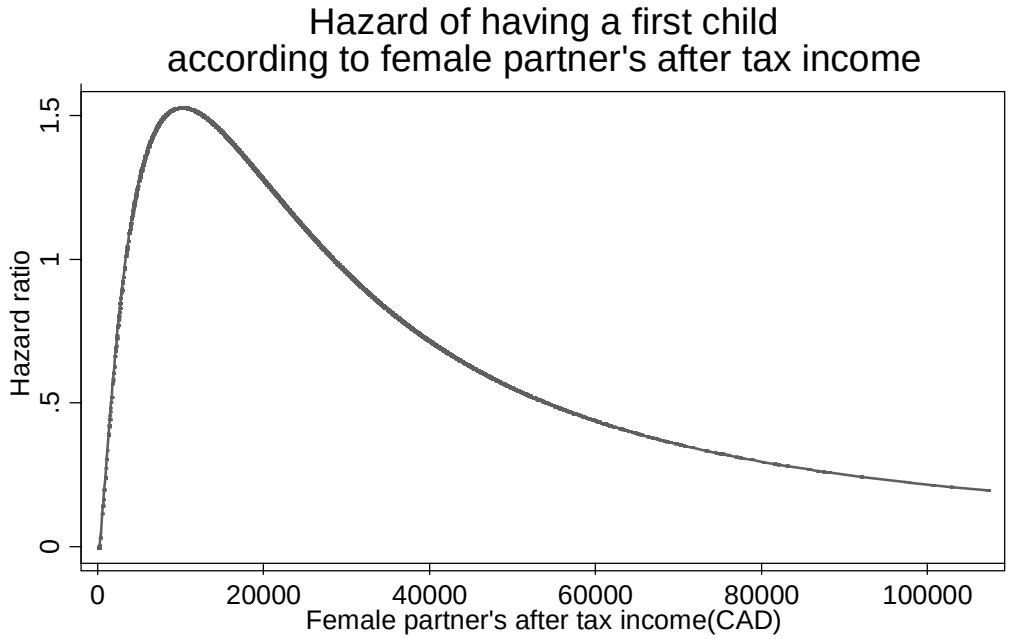
Female partner's unemployment rate is modeled using cubic splines with one knot at 6.4%.

Male partner's unemployment rate is modeled using cubic splines with one knot at 6.7%.

Statistics Canada, (SLID 2006)

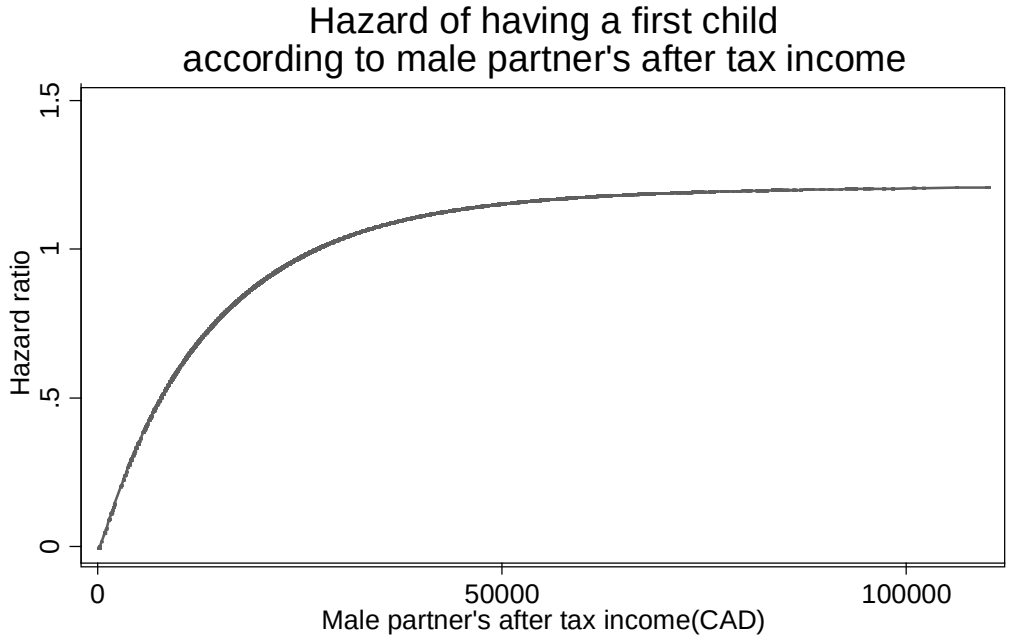
* p<0.1; ** p<0.05; *** p<0.01

Figure 1



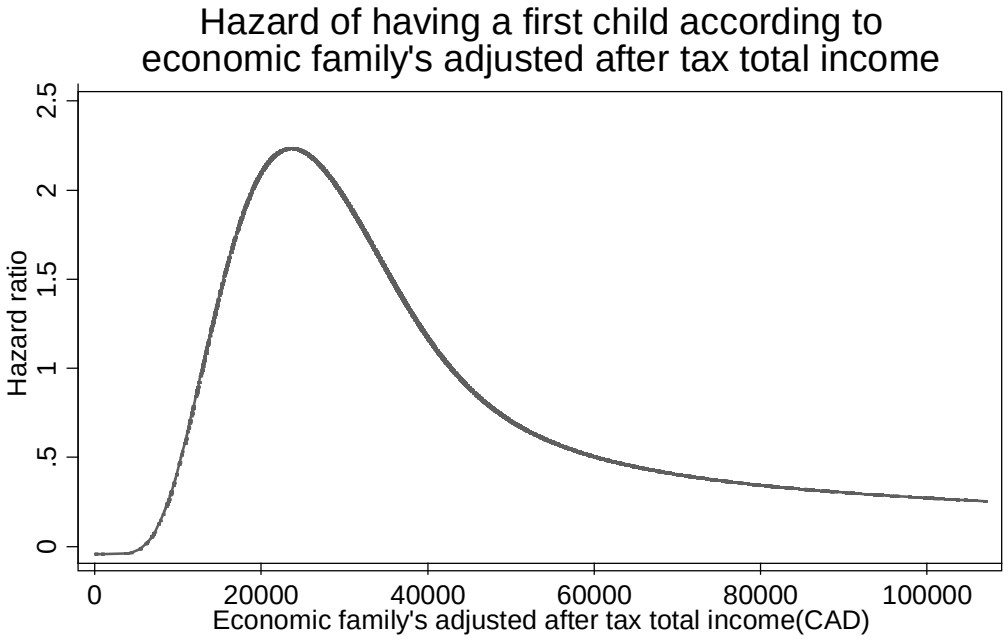
Statistics Canada, (SLID 2006)
Cubic splines model without independant variables
Baseline hazard function

Figure 2



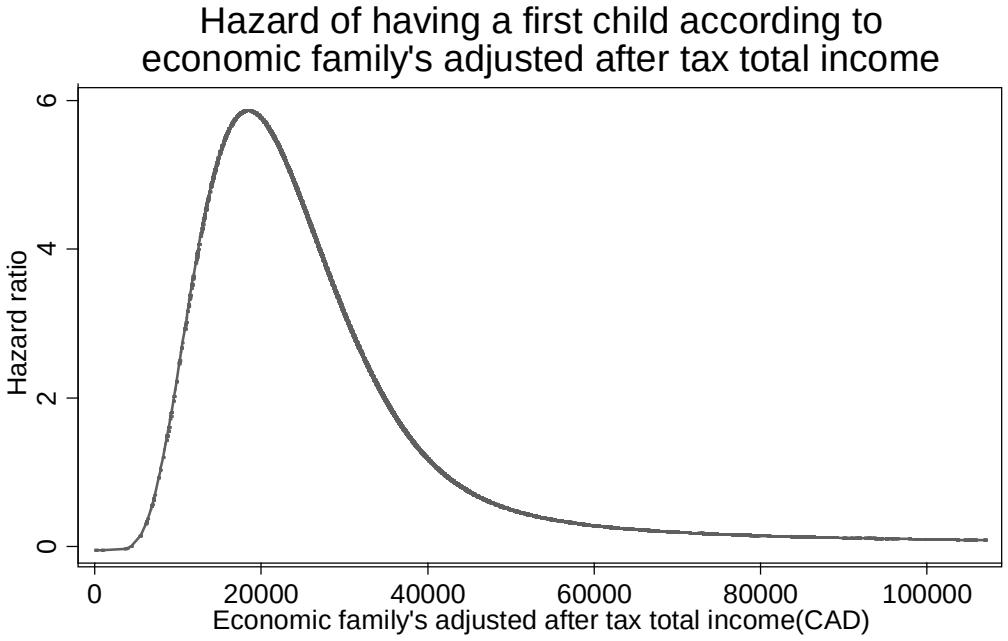
Statistics Canada, (SLID 2006)
Cubic splines model without independant variables
Baseline hazard function

Figure 3



Statistics Canada, (SLID 2006)
Cubic splines model without independant variables
Baseline hazard function

Figure 4



Statistics Canada, (SLID 2006)
Cubic splines model
Baseline hazard function

Figure 5

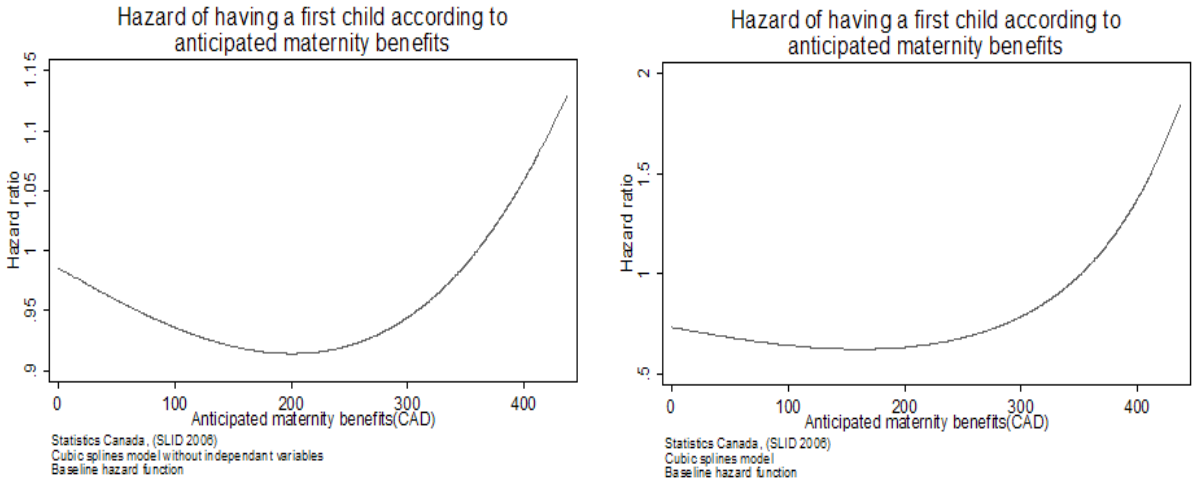
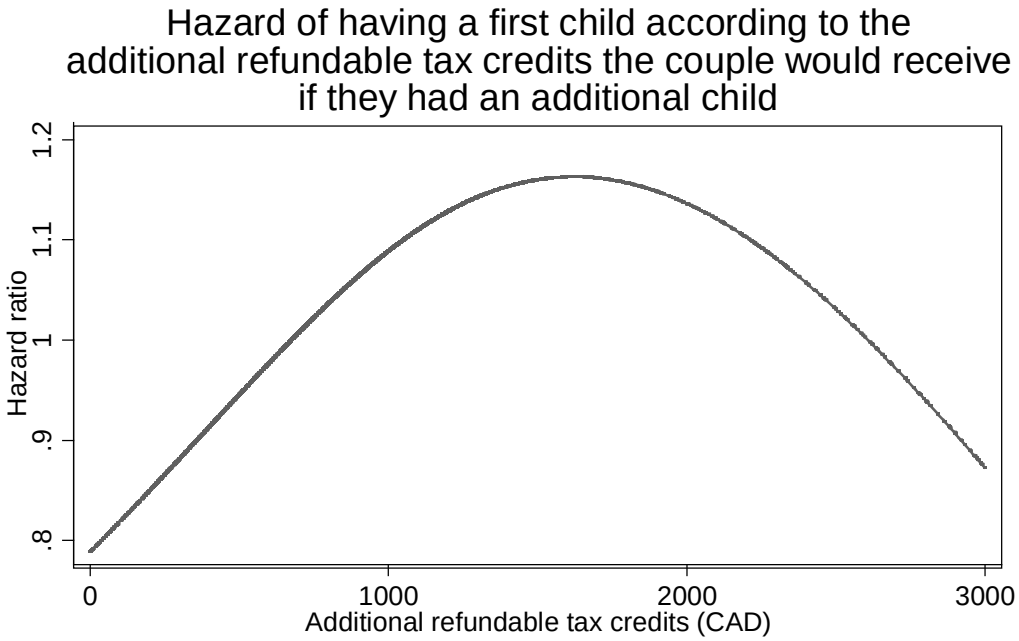
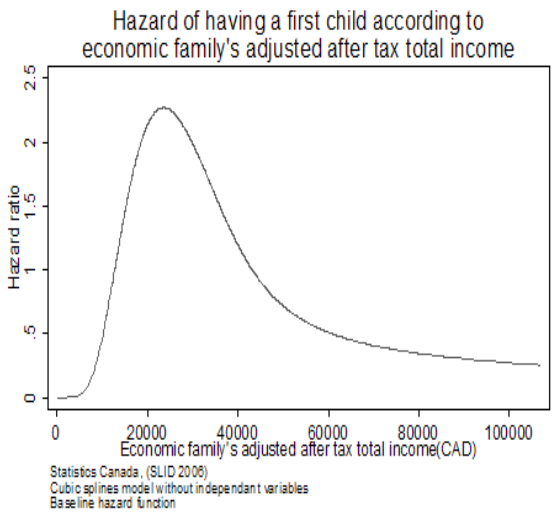


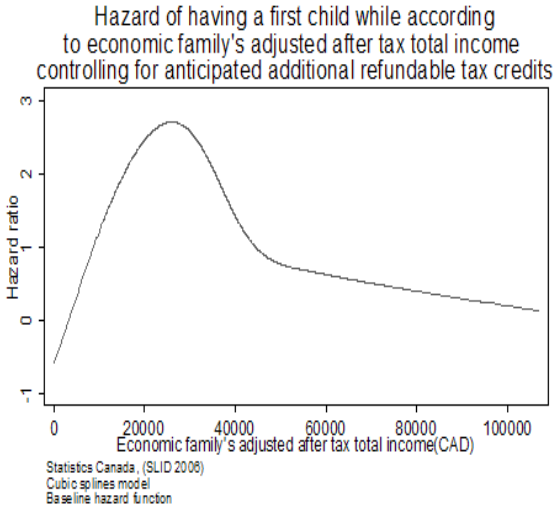
Figure 6



Statistics Canada, (SLID 2006)
Cubic splines model without independant variables
Baseline hazard function

Figure 7


Hazard of having a first child according to economic family's adjusted after tax total income
Hazard ratio
0
.5
1
1.5
2
2.5
0
20000
40000
60000
80000
100000
Economic family's adjusted after tax total income(CAD)
Statistics Canada, (SLID 2006)
Cubic splines model without independant variables
Baseline hazard function


Hazard of having a first child while according to economic family's adjusted after tax total income controlling for anticipated additional refundable tax credits
Hazard ratio
-1
0
1
2
3
0
20000
40000
60000
80000
100000
Economic family's adjusted after tax total income(CAD)
Statistics Canada, (SLID 2006)
Cubic splines model
Baseline hazard function