A Couple-Perspective on Fertility Outcomes: Do Relative Resources Matter for First and Second Births?

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INTRODUCTION

In investigating fertility outcomes, the role of the (male) partner and of the decision-making process within couples has recently been the subject of more extensive debate in demographic and sociological research (Andersson et al. 2005: 220, Bauer and Jacob 2008: 1f., Corijn et al. 1996: 117, Klein 2003: 506). In this debate, it has been argued that fertility outcomes can in part be understood as the product of a bargaining process or of power-relations among the partners, with relative resources such as relative levels of education and income being one potential source of inequity (Folbre 1983: 267, Ott 1989: 109, Esping-Andersen 2009: 8ff., Kohlmann and Kopp 1997: 263, Brodmann et al 2007: 603, Thomson 1997, Thomson and Hoem 1998). It seems, thus, crucial to integrate information about both partners and the distribution of resources between them into the analysis of the occurrence and timing of births.

Empirically, however, little is known about the relationship between socio-economic relative resources within couples and their fertility outcomes, specifically with regards to the US. This is not only surprising given the importance of both partners in birth transitions, but also given the central role which is ascribed to changes in women's education and labor force participation in understanding low and changing fertility rates in many Western societies today. While the question of how women's education and labor force participation relate to their fertility has been in the focus of demographic research, it is not well understood if and how these factors' influence on fertility might be mediated through the relationship with a spouse or cohabiting partner. Therefore, this paper will investigate if the relative level of the partners' education, income, and working hours or, in other words, socio-economic gender equity within maried couples, plays a role in the timing and occurrence of the transition to parenthood and to second births in the US.

McDonald (2000a & 2000b) offers a theoretical framework for this research question. He argues that women have made considerable gains in self-control over their reproduction, but while they today can participate equally in education and the labor market, gender symmetry is not yet achieved with respect to the division of labor market work and unpaid household work within the family. Nurturing and housework are traditionally and often still today female responsibilities. In consequence, some women will choose to limit their fertility in order to be able to fully participate in social institutions such as the labor market (2000b:436f., 2000a:5). McDonald hypothesizes that conflicting levels of gender equity within families and institutions targeted at the family (like family taxation, child care provision) versus social institutions targeted at the individual (like education and labor market institutions) within a society are responsible for the fertility decline to much below replacement levels in many countries of the Western world (2000a:1). Hence, studying relative resources within couples and how they are related to the couple's fertility might be an under researched key component in understanding fertility outcomes in the Western world today.

McDonalds approach is tailored at explaining low and lowest-low fertility in developed nations, but is also well suited as a framework to investigate birth transition in developed countries with a total fertility rate at replacement like the US. The US have exhibited near replacement total fertility throughout the last decades, and have also been classified as a liberal welfare regime with a low degree of gendered family policy (Esping-Andersen 1990). Recent literature has argued that it is exactly this absence of comprehensive family policies like extended maternity/parental leaves which enables at least highly skilled women to compete more easily with men in the labor market (Mandel and Shalev 2009, Grunow, Aisenbrey, Evertsson 2011). It can, hence, be argued that the US are a country in which gender equity is promoted in both the individual and the family institutions, at least on the policy level, which might in turn enable women to combine childrearing and labor market participation more easily. In the US, the expectation would then be for women to have a higher likelihood of a birth transition, if their share of relative resources within their partnership is larger.

This paper will in the following investigate the relationship between relative levels of education, working status, working hours, and income among white married partners in the US on the transition to first and second births. The data for the analyses come from the NLSY79, a household panel with 23 waves, collected yearly or bi-yearly since 1979, for the cohort born between 1957 and 1965. I use Cox proportional hazard models with a competing risk approach, to account for the competing risk of leaving the risk set through union dissolution before/instead of the birth of a child.

PREVIOUS RESEARCH

Previous research has examined the relationship between equity within couples and the transition to first and second births, but predominantly with a focus on Western European countries. Also, those studies predominantly focus on the division of household labor and caretaking as a measurement for gender equity within couples (Cooke 2004 & 2009, Torr and Short 2004, Brodmann et al. 2007, Henz 2008). A different body of literature, however, suggests that the gendered division of household labor is itself, at least in part, dependent upon relative resources like income, education, or hours spent in the labor market among the partners (Evertsson and Nermo 2004 & 2007, Brayfield 1992, Cunningham 2007, Grunow et al. 2007) or the absolute income or education of the female (Gupta 2007, Lewin-Epstein et al. 2006). I, therefore, focus on measuring gender equity within couples as relative socio-economic resources.

To the best of my knowledge, the only study for the US context is Torr and Short's (2004) analysis of the likelihood of a second birth conditional on the division of household labor within dual-earner couples, using the NSFH. Their main finding is that couples were much more likely to progress to a second birth if they had either an egalitarian share of household labor or did adhere to the male breadwinner model with the female conducting over 80% of the household work (2004:119f.). This is in line with expectations derived from McDonald's argument; couples who adhere to the male breadwinner model in the first place are more likely to experience a second birth, as are couples among which the male takes up an equal share of housework to buffer negative effects of children on the woman's labor market prospects. While Torr and Short control for age groups in their analysis they do not have a cohort design, they use logistic regression instead of survival analysis and can thus not speak to the timing of births and also have problems with right censoring in their study.

In addition to this study, Ward and Butz (1980) have proposed a formal economic decision-making model that targets at modeling the timing of births within couples conditional on female and male wage rates and labor force participation. They, however, use simulation techniques and aggregate data, and do not model the micro-processes at the couple level I am interested in. I therefore refrain from reviewing their paper and the related economic literature.

HYPOTHESIS

First, I expect to find that relative resources play a crucial role for progressing to a first or second birth. Couples with a more equal distribution of resources are expected to stay childless less often and experience a higher transition rate to second births, especially in the US, where gender equity in the individual institutions is higher and formal familial institutions are more gender neutral.

However, I, second, expect to find a curvilinear relationship between relative income and first and second birth rates. This is due to the assumption that couples who adhere to the male breadwinner model (hence a woman with little or no income and a male breadwinner) are more likely to have a strong family orientation as was already shown, albeit for the case of Germany, by Cook (2004) and Henz (2008). Also, McDonald has suggested a curvilinear relationship between household income and parity outcomes, hence stressing a social equity differential in fertility outcomes (2000a: 11). While he is not explicit about it, he suggests at this point that social and gender equity are interlinked, and that women in the middle class face the strongest dilemma when faced with incongruent institutions.

Third, I hypothesize that the association between relative resources and birth rates might differ by the total amount of resources within the household. I expect that a higher share of her income accelerates a first or second birth specifically in households with high levels of absolute income. This is because in those household, she might be specifically prone to be able to spend enough on child care and domestic help services to significantly ease the work-family challenges. In other words, if the woman's relative share of resources is large, she has more power to decide over expenditures. If more of the household income will be spent towards child care and domestic services, her responsibility for children and domestic labor can be lowered, which is especially important if the partners do not share domestic tasks equally. More importantly, but on a more abstract level, if the woman, within the relationship, is able to realize her aspirations towards her "individual role", as McDonald calls it, specifically after the birth of the first child, she will be less likely to perceive a strong dilemma between the birth of an additional child and her personal aspirations in the labor market. Therefore the incorporation of interaction effects between relative income and total family cinome within the household will be important, a strategy not yet used by other research.

DATA AND ANALYTICAL APPROACH

Data

The data for the analyses come from the NLSY79, a household panel with 23 waves, collected since 1979. Interviews have been conducted yearly between 1979 and 1994, and bi-yearly thereafter, the survey is ongoing. The NLSY79 consists of one birth cohort only, respondents aged 14-22 in 1979 were chosen for inclusion in the panel, representing birth cohorts 1957-1965. The strength of the NLSY79 is its detailed information on relationship history of primary respondents (and partly of those of their partners), detailed fertility history information as well as employment histories. Socio-economic information on spouses has been collected in detail since the beginning of the survey, but there is no information on income, occupation, or hours spent in the labor market for cohabitating partners before the panel year 1994.Originally, I had planned to include cohabitators who never married as well as the time eventual spouses spent living in cohabitation before the date of their marriage into the analyses, but refrained from doing so due to too many missing values on the partner's income and labor supply variables before the 1994 survey – a time at which the first birth had already occurred for many respondents. While the NLSY79 provides detailed information on socio-economic resources of both spouses, another drawback of the NLSY79 is that there is no information on the division of household labor, or of the number of children a spouse might have had from prior relationships.

The full NLSY sample consists of 12686 respondents, and information on their household members. The NLSY cautions that fertility histories of male respondents are not as accurate as those for female respondents. I therefore restricted the sample to female respondents, and further to those women who were childless at the time of their first marriage. Hence, only first marriages of respondents/women are included in my sample. The male spouses, conversely, might have been married before. Furthermore, only white women are currently included in the analysis. First results have shown that relationship between relative resources and first and second birth transitions differs between whites, blacks, and Hispanics. Therefore, I estimated models separately for the three race groups and will include only the results for white women (regardless of race of the partner) into the current version of the paper. This results in a sample size of 2768 white women at risk for first birth within their first marriage. Missing values on the relevant covariates further reduce the sample to a final size of 1926 women (82155 person months) during their first marriages who can be included in the risk set for the analysis of first birth (with 1314 first birth events, and 254 union dissolution events).

For the analysis of second birth, only white women who have had their first birth in their first marriage enter the risk set, resulting in a sample size of 1895 (with 1143 second birth failures).

Dependent process and estimation strategy

For modeling the transition to first birth, the dependent process is the time, measured in months, from the union formation to the occurrence of a first birth. In some couples, spouses are not yet present in the household at the time of marriage, the date of origin for them hence changes to the time when the spouse was first present in the household at the time of interview (because no process time can be included into the analyses with missing values for the spouses covariates). Women leave the risk set through the event of interest, the first birth, but can also leave the risk set through censoring (panel attrition or being in the first marriage but event-free until the last wave included, which is 2008) or through the dissolution of the first marriage before the birth of their first child occurs. Since a union dissolution is a competing event for leaving the risk set, I have used a competing risk approach, coding birth events as 1 and union dissolutions as 2. For easier interpretation of the effects of the covariates on the birth hazard, I estimate separate Cox proportional hazard models for the event of first birth (treating union dissolutions as right censored) and for the competing event of union dissolution (treating birth events as right censored), as suggested by Cleves et al. (2010) and Allison (2010). The same strategy is used for the models estimating second births. Since the focus of the paper is on birth transitions, and not union dissolution, the model results for union results will be presented only very briefly.

Covariates

Many of my covariates are time-varying. While birth and relationship histories are available on a monthly time scale, covariates have only been measured yearly (or bi-yearly) with interview dates. Some of the work-history variables have been collected in an event-history format, and are available in the format of weekly histories. This, however, applies only to some of the relevant variables for the respondent (employment status, hours worked), and to none of the respondents variables. I therefore am using the yearly variables only, and assign them the same value for the months between interview dates.

Education is time varying and has been measured as highest year completed. After testing many different specification of education, I settled on a three category specification for both respondents' and spouses' educational attainment. They indicate having 1) completed high school education or less (0-12 years), 2) some college or college education (13-16) or 3) more than college education (17+) years. This somewhat unusual categorization was chosen because high levels of education among men and women (and their interactions) are expected to particularly matter for birth transitions, and it was therefore important to be able to distinguish between having college education versus postgraduate education. The models also contain a full set of interactions between respondents (her) and spouses (his) education. Those with 0-12 years of education serve as the reference group in the models. All time-varying covariates, including the educational variables, are lagged by 9 months, to allow for the time of pregnancy.

Enrollment in education is time varying and only available as a variable for respondents, not spouses, unfortunately. Since enrollment can be expected to reduce the likelihood of pregnancy and birth, it is included in all models. It is a dummy variable that indicates respondent's enrollment in either college or high school.

Work Status is time varying and coded as a dummy variable, indicating current employment in the labor market versus non-employment, including inactivity and unemployment. The work status of her and him has been interacted, so that four possible working-status indicator variables have been formed: 1) dual earner couples (the largest group), male breadwinner couples, female breadwinner couples, and couples with two non-working spouses. Dual earner couples serve as the reference category.

Hours Worked is time varying and, unfortunately, measured differently for her and him. For respondents, alias her, a variable indicated how many hours she has worked in the last calendar year. For spouses, alias him, only information on the average hours worked per week in the last calendar year is available. I have multiplied this value by 52 to have a roughly comparable indicator for men's and women's hours worked in the last calendar year. In addition, a variable was added to the models that indicates how many weeks she has worked in the last calendar year, to adjust for the difference in the measurement of the work-hour variables for him and her. The variable for weeks worked in the last calendar year contained values above 52 for some cases, which I set to 52. An interaction of her and his yearly work hours in the last calendar year is also included.

Income measures are time varying. The models contain a measure for her yearly income from wages and salaries, his yearly income from wages and salaries, and the yearly family income. All three income variables are entered into the models in form of their natural logs. Additionally, there is a measure for **her share of the total family income**, which is simply measured as the percentage which the woman contributes to the total (non-logged) yearly family income, ranging from 0-100. There were some instances in which the wages of the woman were larger than the yearly family income (I still need to examine why that is). For those cases, I did set her share to 100%. As discussed, the share of the woman's income can be expected to have a curvilinear effect. Thus, a squared term and cubic term of her share of family income are included in the models. An increasing share of the woman of the total family income may lead to an increasing hazard of birth, because she might have a larger say over the expenditures to be spent for childcare, household help etc., but couples in which the woman earns most or all the income might be less likely to have a child, because they would be more vulnerable to her potential loss of income with childbirth, even if it was just for a short period of time.

His and her **Age at Marriage** are the only non-time-varying covariates currently included in the models, and range from 13-49 for women and 15-73 for the spouses. An interaction of her and his age at marriage was found to be significant in all models and was therefore included throughout.

Number of Children Desired is included into the model as a time varying covariate and is only available for respondents/women, not for spouses. However, there are only two surveys in which this question has been included; the 1979 and 1982 survey. I did fill in the 1979 value for the 1980/81 surveys and the 1982 value for all subsequent surveys. Please note that not all observations have two measures of desired number of children while at risk for first or second births, because for many cases, the time at risk does not span over the years 1979 to 1982, but ends earlier or starts later or is in between those two years, so that for many cases, this variable is basically reduced to a time invariant covariate. I have recoded it into three categories: no children desired, 1 child desired, 2 and more children desired. Those who desire 2 or more children are the largest group and serve as the reference category in the models.

RESULTS AND DISCUSSION

First births

Table 1 shows the results for the Cox proportional hazards model estimating first birth transitions for white women in their first marriage, with the time of union dissolutions and beyond treated as consored. The estat phtest test for proportional hazards in Stata has indicated that the null hypothesis of proportional hazards for her and his educational groups is rejected. Hence, I have added interactions of those educational groups with time into the model to allow for non-proportional hazards of first birth (reflected in the 4 last coefficients in the table). Those indicate that the hazard of first birth is non-proportional for women with college and postgraduate education as compared to women with high school or less education; for spouses, the hazard of first birth transitions only differs significantly for those with postgraduate education from the reference group.

The coefficients of interest are the interactions between his and her educational attainment, the combinations of his and her work status, her share of the family income and related variables, and the interaction of hours worked. The coefficients indicate that the hazard of a first birth (or more precisely the conception of the first pregnancy resulting in a live birth, since all time-varying covariates are lagged by 9 months) does not differ significantly by the relative level of education of her and him. All interaction terms involving his and her educational attainment are insignificant. Predicted hazard rates (not shown) and models estimated without the interactin effects (not shown) indicate that first birth hazard differs by her educational attainment with higher educated women having later and fewer transitions to first birth, which is a known finding in the literature. The relative level of education has hence no effect on first birth probabilities, net of other relative resources. Her enrollment in education, however, is highly significant on the .001%level, and reduces the hazard of a first birth by 30% compared to women who are not enrolled. Three dummy variables have been included into the model to reflect the four possible work status combinations of her and him. The reference group is dual earner couples (the largest group), indicator variables for male breadwinner couples, female breadwinner couples, and couples with two non-working spouses are insignificant. This suggests that the hazard for a first birth in first marriages does not differ for dual earner couples and those other three possible working-status combinations of her and him. All simple (logged) income variables are non-significant. The squared term for her share of the family income is, however, marginally significant, and the interaction of her share of income*total family income is significant on the .01%level. Thus, there is, as expected, not only a significant effect of her family income share on the first birth hazard, but this effect also differs by the total amount of family income. In other words, not only is there a curvilinear effect of the woman's income share present, this effect also varies among households with different levels of total income. Figures 1-2 display the predicted survival rates for first birth for different combinations of women's income share and women's income share*total family income. Figure 1 shows predicted survival for households that are well off with a log family income value of 12, which corresponds to ca. the 95th percentile of the family income log-distribution. The three lines depict the effect of women's income share being 10%, 50%, and 80% of the total family income. A higher income share does predict an earlier timing and lower predicted survival for first births, hence more first birth occurring, which supports the hypothesis that a large income share might especially help women among couples with a high family income to ease the work-family conflict. Figures 2 and 3 show women's shares of 20%, 50%, and 80% of the total family income for 1) a log income of 10, which corresponds to the median family income (figure 2), and a log income of 9, corresponding to ca. the 10th percentile in the log family income distribution. At all income levels, her higher share of the family income predicts a higher transition rate to first births.

The interaction effect of his and her work hours is also marginally significant. Figure 4 depicts predicted first birth survival by working-hours combinations of him and her. The obvious differene is between women who on average work 40 hours per week, who have fewer first birth transitions, to women who work 20 hours per week, who have much more first births, but this difference is attenuated somewhat by his working hours. Couples with two full time workers have a higher transition to first births than couples with a full-time wife and part-time husband. This corresponds to the hypothesis that birth probabilities decline when women take the primary breadwinner role. While this hypothesis is confirmed for the working hours, this was not the case for the share of income. Women's yearly weeks have a significant effect on the first birth rate on the .01 level, each additional week worked reduces the hazard of first birth by about 1%.

His and her age at first marriage and their interaction serve as control variables, and the interaction term is highly significant. Also, the desired number of kids by the women significantly affect first birth transitions, women who desire only one child have a hazard of first birth only 66% of the hazard women have who desire two or more kids, and the hazard is reduced to 42% for women who don't desire any kids, compared to the first birth hazard for the reference group.

Table 2 shows the model results for the competing risk, union dissolution, now, first births are coded as the point of censoring. In this model, the interactions of education and time were not significant, and were omitted from the model. Significant predictors are the family income, her share of income, the interaction between her share and the total family income, and the interaction of the age controls.

Second birth

Model results for the transition to second births are presented in table 3. Here, among the variables of interest, relative education and relative income have significant effects on the second birth hazard. For easier interpretation, the education coefficients have been reformulated; I formed 9 categories of all possible educational combinations of her and him (e.g. both high school or less; she high school or less/he college; she high school or less/he postgraduate education etc.). The combination of both spouses having 0-12 years of education was the most prevalent and serves as reference category. The education interactions with time were no longer significant, a likelihood ratio test indicated that the model without the time interactions fits the data better, and they were hence omitted from the second birth model. The level of partner's education does not change the second birth hazard for women with 0-12 years of education, but for women with college education or postgraduate education, the partner's educational attainment makes a difference. Interestingly, the birth hazard increases among those more highly educated women only if the partner has at least the same amount of education as they have. Women with college education have a second birth hazard that is 29% larger than the reference group when the partner has college education also, when he has postgraduate education the hazard is increased by 62%. Wald tests shows that the coefficients for college educated women with a lower educated spouse versus those for college educated women with a college or postsecondary educated spouse differ significantly (p values=.021 and .001 respectively). The same pattern holds for women with postgraduate education; their second birth hazard increases significantly by 95% compared to the reference group when the spouse has postgraduate education (difference in coefficients between women with postgraduate education and a partner with postgraduate education versus postgraduate women with a college educated partner is significant per Wald test, p value=.025). Thus, for women with more than high school education, educational homogamy increases the second birth hazard, but it does not matter for women with high school education only. The interpretation of this finding is, however, less clear. Possible, the male spouse is still enrolled in education when couples have a more highly educated female spouse. If that was the case, it would likely be his enrollment that suppresses the second birth rate, and not necessarily the educational difference between the spouses. Unfortunately, I cannot control for this scenario with the NLSY data. But this result also confirms the first and second hypothesis; relative education matters for the progression to a second birth, and it also differs by total amount of this resource, here education. It is a possible scenario that women who have more education than their spouse carry the primary responsible for a stable future family income simply because they have better career prospects than their spouses, a situation that is not controlled for with the included income variables. In this case, the couple may be more reluctant to have a second child, in order to not jeopardize her career. In couples where both have the same high amount of education, women may have more bargaining power and resources without carrying the burden of primary breadwinner, and, as expected, this may help them in making spending decisions that ease combining labor market work with childrearing of more than one child.

The coefficients of the income variables are, however, telling a somewhat different story. The total family income and her share of family income are significant on the .01 level, and the interaction between her share and the family income is marginally significant. Figures 5 and 6 present predicted survival of the second birth for different values of the women's share of family income, for a log income of 9 (figure 5) and 11 (figure 6), corresponding to ca. the 15th and the 85th percentile of log family income. The figures show that increases in women's relative family income decrease the transition rate to second births, and this holds for both household income levels. This is a contradictory finding to the aforementioned hypothesis, which expected couples in which she earns a higher percentage of the family income to make more and faster transition to the second child. Possible, families who rely on the income of the female spouse are more reluctant to proceed to parity two, in order not to jeopardize the family income. This effect, however, was not present at the transition to first birth. Here, a selection effect might/spurious process be at work, so that couples who have a greater preference for the woman to devote herself more strongly to childrearing have both, a greater interest in a second child as well as a female spouse who earns less than her spouse. In the regression, I try to control for this using the indicator for a male breadwinner couple, hours worked, and the variables for number of children desired, but certain aspects of this process like attitudes toward gender roles and career aspirations remain unaccounted for.

The absolute or relative time spent working does not have any significant effect, as doesn't his or her labor market status at the time of conception. The indicators for his and her age at marriage and number of children desired are significant.

While there are many second birth failures in the sample at risk, there are only few union dissolution events after the first and before the second birth in my sample. This made it impossible to compute coefficients for the educational categories and interactions, I have therefore entered his and her education as continuous variables measured in years, and an interaction term of the two variables. The interaction is marginally significant, and predicted survival (not shown) indicates that couples where both have college or more education are somewhat less likely to separate. This might be directly related to the findings for second birth transitions: if couples who are less educational homogamus are more likely to dissolve their union soon after a first birth, specifically if the female spouse has a larger educational attainment than her spouse, then homogamus couples with higher levels f education may be more likely to have a second birth, simply because they are more likely to stay together.

LIMITATIONS AND CONCLUSION

Using data from the NLSY79, I have estimated cox regression models to understand the relationship between relative socio-economic resources like education and income in married white couples and their transitions to first and second births. I expected to find that higher relative levels of family income by the female spouse would lead to higher first and second birth rates, because females are expected to have more decision power over spending toward child care and household help in such unions. My first findings show that while not all relative resources matter, it seems well worth to incorporate partner information into analyzing birth transitions, specifically with respect to income dynamics and educational homogamy within couples. For first birth transitions, only her education had significant effects. However, couples with women who earned a higher share of the family income had more first birth transitions, and this effect was stronger in households with higher incomes. Also, a negative effect of her work hours on first birth transitions was mediated by the spouses work hours, two full time working spouses had a higher first birth transition rate than couples where she works full time and he part time. Relative socio economic resources also have a significant effects on second birth transition, albeit differently form the first births. A male spouse who has at least as much educational attainment as his wife had a positive effect on the second birth rate for women with some college or more education. The income share of the wife showed a negative effect on second birth transitions, net of working hours, employment status, and educational measures.

This work is still in progress, and the results are preliminary and have some caveats. The models don't control for two important confounders, which are the relationship quality of the couple and the division of household labor. The latter may directly affect birth transitions and attenuate the effects found in the current analysis, while relationship quality may rather be related to the issue of which couples separate early on and hence drop out of the risk set for a (second) birth event. This might be a specific concern for second birth, since the competing risk analysis shows that the interaction of her and his education significantly affects not only second birth hazard but also dissolution hazards. The NLSY provides information on relationship quality, although only in a limited because it was measured at a few waves only. It does not have any information on the division of household labor, but includes some measures for child care expenditure, and I plan to incorporate both measures into future versions of this paper. Also, it is planned to add his, her, and the relative occupational prestige to the analysis, in order to get at the question whether career prospects of both partners may be driving some of the results.

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TABLES AND FIGURES

Table 1 Cox proportional hazard model for first birth

_t	Hazard Ratio	Std. Error	z	P>z	CI lower	CI upper
she educ 13-16	0.7299433	0.0972149	-2.36	0.018	0.562244	0.9476619
she educ 17+	0.4012284	0.1866064	-1.96	0.05	0.1612532	0.9983322
he educ 13-16	0.9114033	0.1156392	-0.73	0.465	0.7107384	1.168723
he educ 17+	0.6421026	0.2316993	-1.23	0.22	0.3165576	1.302435
she&he 13-16	0.9702297	0.1349283	-0.22	0.828	0.7387531	1.274236
she 13-16&he 17+	1.331238	0.4703524	0.81	0.418	0.6660544	2.660737
she 17+&he 13-16	1.494254	0.6732637	0.89	0.373	0.6178741	3.613674
she&he17+	2.344305	1.272475	1.57	0.117	0.8090711	6.792684
she enrolled	0.6985174	0.0640521	-3.91	0	0.5836124	0.8360457
mbwcouple	0.8875001	0.2210431	-0.48	0.632	0.5447107	1.446009
fbreadwinner	1.47556	0.3554624	1.61	0.106	0.9202424	2.365981
bothnonwork	0.6710289	0.2564417	-1.04	0.297	0.3172812	1.419182
his wages	1.009494	0.0128215	0.74	0.457	0.9846744	1.034939
family income	1.046643	0.0669905	0.71	0.476	0.9232461	1.186533
her wages	1.016195	0.0411664	0.4	0.692	0.9386305	1.100169
her share income	0.9847123	0.0187546	-0.81	0.419	0.9486315	1.022165
her share^2	0.9994176	0.0003148	-1.85	0.064	0.9988008	1.000035
her share ^3	1.000003	2.09E-06	1.55	0.12	0.9999992	1.000007
her share*faminc	1.00402	0.0015317	2.63	0.009	1.001023	1.007027
his hours	0.9999464	0.000085	-0.63	0.529	0.9997798	1.000113
her hours	0.9994259	0.0001559	-3.68	0	0.9991205	0.9997314
her weeks	0.9891488	0.004051	-2.66	0.008	0.9812408	0.9971206
her*his hours	1	5.21E-08	1.93	0.054	1	1
her age mar	1.091185	0.0364914	2.61	0.009	1.021957	1.165103
his age mar	1.035689	0.0276091	1.32	0.188	0.9829652	1.09124
no kids des	0.427504	0.0608371	-5.97	0	0.3234504	0.5650315
one kid des	0.6609868	0.0860843	-3.18	0.001	0.5120775	0.8531982
her*his age mar	0.9965646	0.0010808	-3.17	0.002	0.9944487	0.9986851
her ed col*time	1.006528	0.0024276	2.7	0.007	1.001781	1.011298
her ed grad*time	1.008691	0.0037827	2.31	0.021	1.001305	1.016133
his ed col*time	1.003506	0.002426	1.45	0.148	0.9987627	1.008272
his ed grad*time	1.006601	0.0035564	1.86	0.063	0.9996551	1.013596

Table 2 Cox proportional hazard model for union dissolution (competing to first birth)

_t	Hazard Ratio	Std. Error	z	P>z	CI lower	CI upper
she educ 13-16	0.2266894	0.28	0.776	0.6994	1.614131	
she educ 17+	1.503663	0.6448969	0.95	0.342	0.6487594	3.485115
he educ 13-16	1.03803	0.2252353	0.17	0.863	0.6784426	1.588205
he educ 17+	1.357064	0.7233625	0.57	0.567	0.4773976	3.857629
she&he 13-16	0.767682	0.2445395	-0.83	0.407	0.4111851	1.433261
she 13-16&he 17+	0.5341357	0.3491215	-0.96	0.337	0.1483507	1.923152
she 17+&he 13-16	0.7950093	0.428	-0.43	0.67	0.2767711	2.283619
she&he17+	0.3036086	0.2452466	-1.48	0.14	0.0623357	1.478737
she enrolled	0.7798787	0.1751117	-1.11	0.268	0.5022279	1.211026
mbwcouple	0.292111	0.2583812	-1.39	0.164	0.0515981	1.65372
he works	2.688903	1.633488	1.63	0.103	0.8174795	8.844502
she works	0.4019391	0.3920644	-0.93	0.35	0.0594115	2.719254
his wages	1.036977	0.0326847	1.15	0.249	0.9748543	1.103058
family income	0.6079992	0.081155	-3.73	0	0.4680428	0.7898059
her wages	0.9968441	0.0863103	-0.04	0.971	0.841254	1.181211
her share income	0.9099136	0.0326632	-2.63	0.009	0.8480951	0.9762381
her share^2	1.000395	0.0007508	0.53	0.598	0.998925	1.001868
her share ^3	1.000003	4.55E-06	0.65	0.519	0.999994	1.000012
her share*faminc	1.004529	0.0016875	2.69	0.007	1.001227	1.007842
his hours	0.9999775	0.0002092	-0.11	0.914	0.9995676	1.000388
her hours	0.999895	0.0003105	-0.34	0.735	0.9992866	1.000504
her weeks	0.9986596	0.0094619	-0.14	0.887	0.9802857	1.017378
her*his hours	1	1.11E-07	0.73	0.468	0.9999999	1
her age mar	1.064629	0.0740656	0.9	0.368	0.9289256	1.220158
his age mar	1.149774	0.0538811	2.98	0.003	1.048874	1.260381
no kids des	1.361552	0.2561588	1.64	0.101	0.941654	1.968688
one kid des	1.227235	0.2840371	0.88	0.376	0.7796897	1.931675
her*his age mar	0.9953261	0.0020366	-2.29	0.022	0.9913424	0.9993259

Table 3 Cox proportional hazard model for second birth

_t	Hazard Ratio	Std. Error	z	P>z	CI lower	CI upper
she 0-12 he 13-16	0.947939	0.1014774	-0.5	0.617	0.7685265	1.169235
she 1-12 he 17+	0.7498994	0.2879391	-0.75	0.454	0.3533189	1.591619
she 13-16 he 0-12	0.9936225	0.1069386	-0.06	0.953	0.8046571	1.226964
both 13-16	1.290144	0.1142445	2.88	0.004	1.084583	1.534665
she 13-16 he 17+	1.621607	0.2327874	3.37	0.001	1.223919	2.148516
she 17+ he 0-12	0.8237051	0.3191533	-0.5	0.617	0.385447	1.760268
she 17+ he 13-16	1.208759	0.2067562	1.11	0.268	0.8644561	1.690193
both 17+	1.956001	0.3366228	3.9	0	1.395981	2.740682
she enrolled	0.7116718	0.1110977	-2.18	0.029	0.5240834	0.9664049
mbwcouple	1.074334	0.2214764	0.35	0.728	0.7172364	1.609224
fbreadwinner	0.7405542	0.2140743	-1.04	0.299	0.4202399	1.305018
bothnonwork	0.8875948	0.3051837	-0.35	0.729	0.4524225	1.741347
his wages	0.9953948	0.0152533	-0.3	0.763	0.9659434	1.025744
family income	0.7883848	0.0440834	-4.25	0	0.7065492	0.879699
her wages	1.047869	0.0355484	1.38	0.168	0.9804611	1.119911
her share income	0.950952	0.0174148	-2.75	0.006	0.9174248	0.9857044
her share^2	1.000441	0.0003405	1.3	0.195	0.9997744	1.001109
her share ^3	0.9999963	2.36E-06	-1.57	0.116	0.9999917	1.000001
her share*faminc	1.002774	0.001524	1.82	0.068	0.9997912	1.005765
his hours	1.00003	0.0000692	0.43	0.666	0.9998943	1.000165
her hours	0.9999918	0.0001499	-0.06	0.956	0.999698	1.000286
her weeks	0.9998461	0.0035132	-0.04	0.965	0.992984	1.006756
her*his hours	1	5.30E-08	-0.27	0.786	0.9999999	1
her age mar	1.148598	0.0449608	3.54	0	1.063772	1.240188
his age mar	1.01352	0.0324629	0.42	0.675	0.9518494	1.079185
no kids des	0.5954759	0.1148932	-2.69	0.007	0.4079721	0.8691564
one kid des	0.4179995	0.0578979	-6.3	0	0.3186209	0.5483745
her*his age mar	0.9968343	0.0013695	-2.31	0.021	0.9941536	0.9995222

Table 4 Cox proportional hazard model for union dissolution (competing to second birth)

_t	Hazard Ratio	Std. Error	z	P>z	CI lower	CI upper
her educ_linear	1.652707	0.5688827	1.46	0.144	0.8417855	3.244817
his educ_linear	2.085933	0.7532334	2.04	0.042	1.027851	4.233216
his*her educ	0.9490427	0.0265557	-1.87	0.062	0.898396	1.002545
she enrolled	0.9655027	0.7083032	-0.05	0.962	0.2292466	4.066344
mbwcouple	0.1772044	0.1505078	-2.04	0.042	0.0335359	0.9363519
fbreadwinner	1.223969	1.068862	0.23	0.817	0.2210229	6.77803
his wages	0.972505	0.0537331	-0.5	0.614	0.8726921	1.083734
family income	0.6361267	0.1886515	-1.53	0.127	0.3557205	1.13757
her wages	1.030028	0.1445456	0.21	0.833	0.7823456	1.356125
her share income	0.9961965	0.0612681	-0.06	0.951	0.8830686	1.123817
her share^2	1.000222	0.0012152	0.18	0.855	0.9978434	1.002607
her share ^3	0.9999991	7.59E-06	-0.12	0.906	0.9999842	1.000014
her share*faminc	1.000846	0.0034464	0.25	0.806	0.994114	1.007624
his hours	1.000215	0.0002539	0.85	0.396	0.9997179	1.000713
her hours	0.9999134	0.0005916	-0.15	0.884	0.9987547	1.001074
her weeks	0.9799036	0.015563	-1.28	0.201	0.9498705	1.010886
her*his hours	1	1.73E-07	0.76	0.445	0.9999998	1
her age mar	0.8297851	0.2049049	-0.76	0.45	0.5114136	1.346353
his age mar	0.8894771	0.1667581	-0.62	0.532	0.6159601	1.284449
no kids des	1.553495	0.9529939	0.72	0.473	0.4668088	5.169883
one kid des	1.119367	0.4188671	0.3	0.763	0.5375925	2.330731
her*his age mar	1.002391	0.0093958	0.25	0.799	0.984144	1.020977

Figure 1 Predicted survival for first birth (model 1) by her share of family income for a log family income of 12= 95th percentile

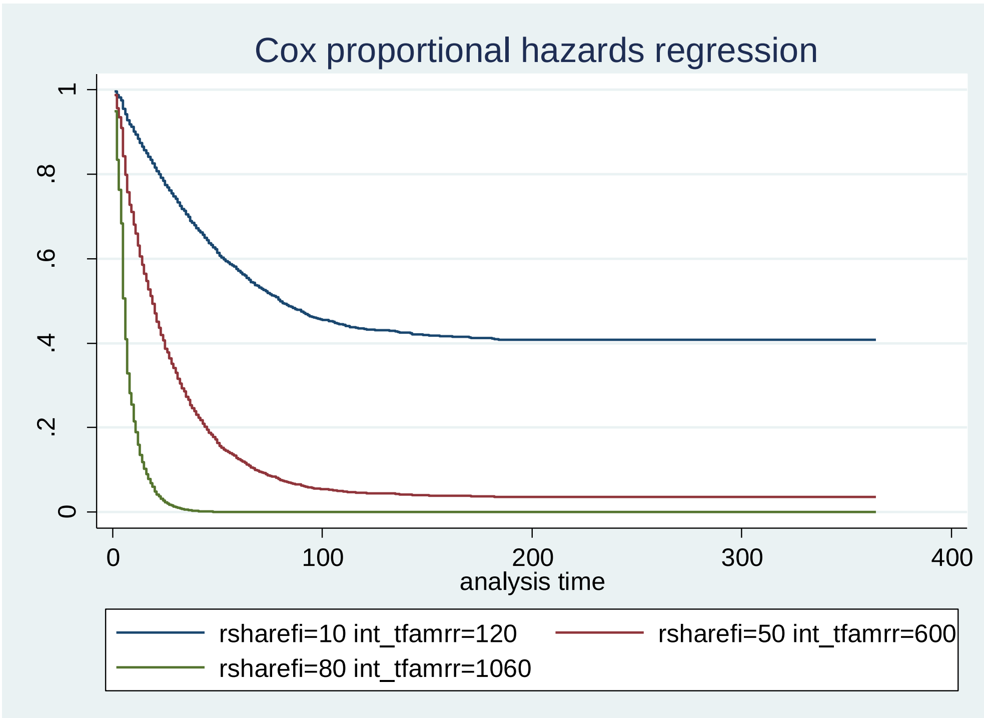

Figure 2 Predicted survival for first birth (model 1) by her share of family income for a log family income of 10= th percentile

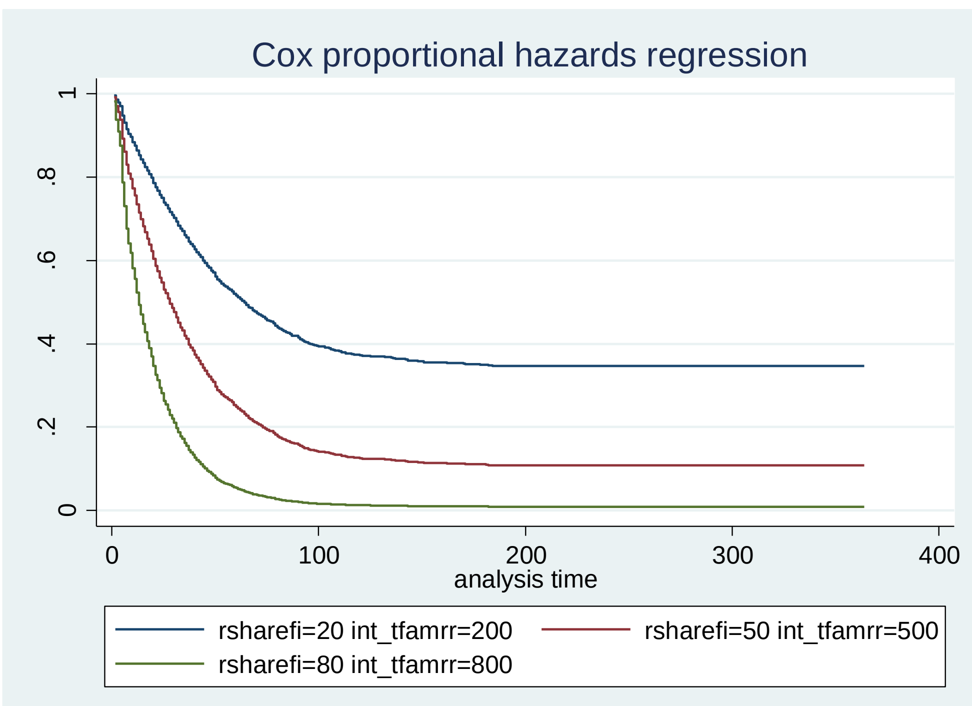

Figure 3 Predicted survival for first birth (model 1) by her share of family income for a log family income of 9= th percentile

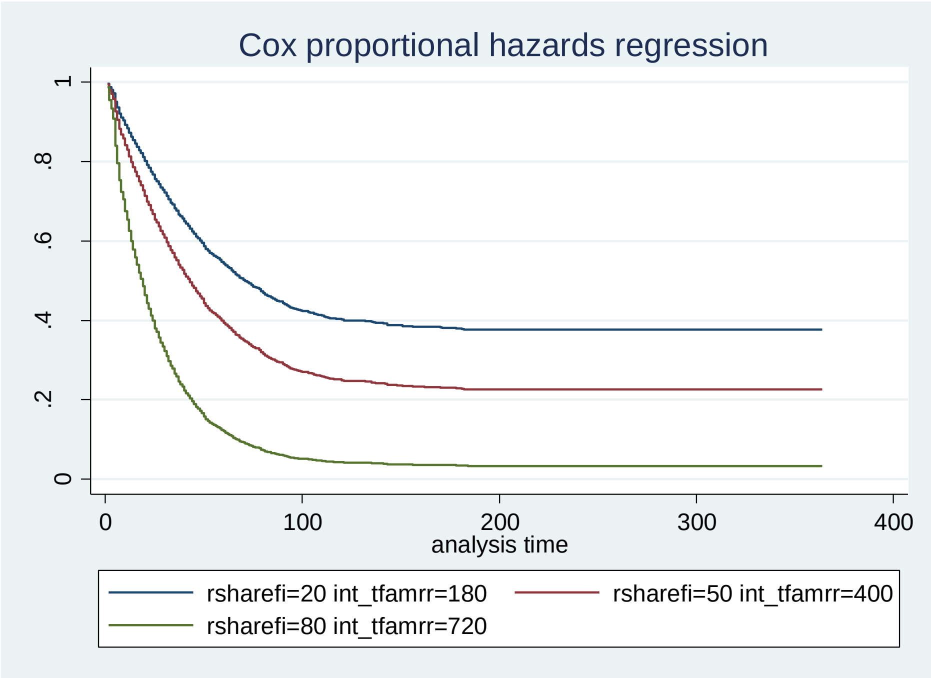

Figure 4

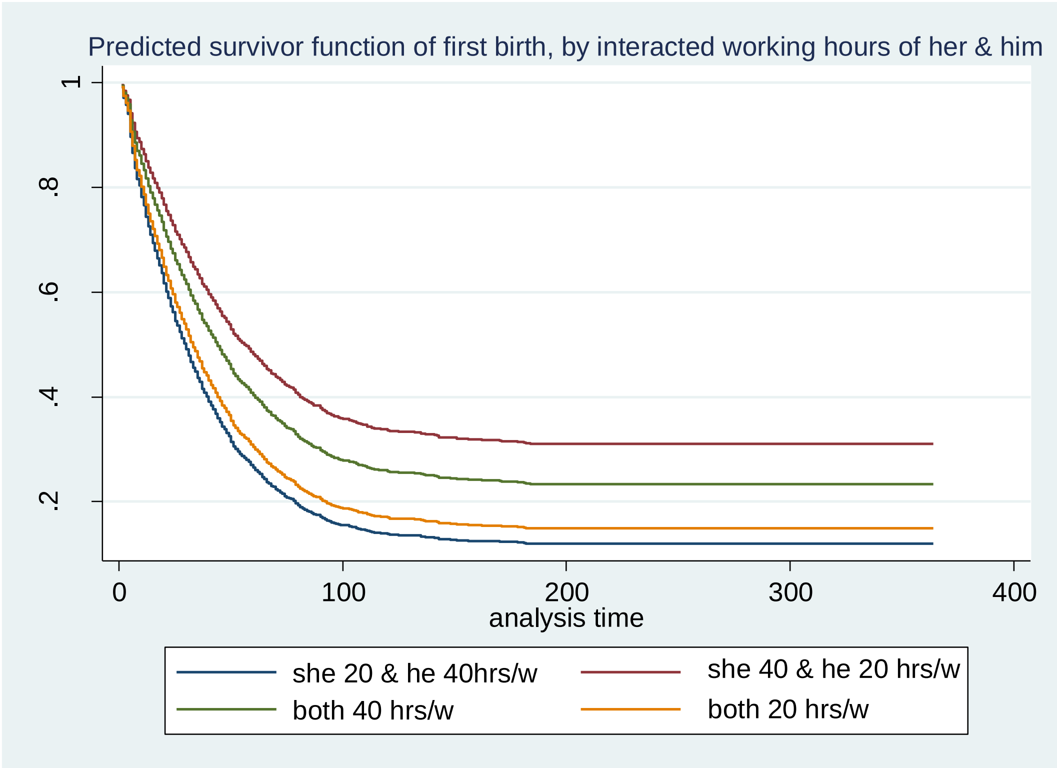

Figure 5 Predicted survival for second birth (model 3) by her share of family income for a log family income of 11

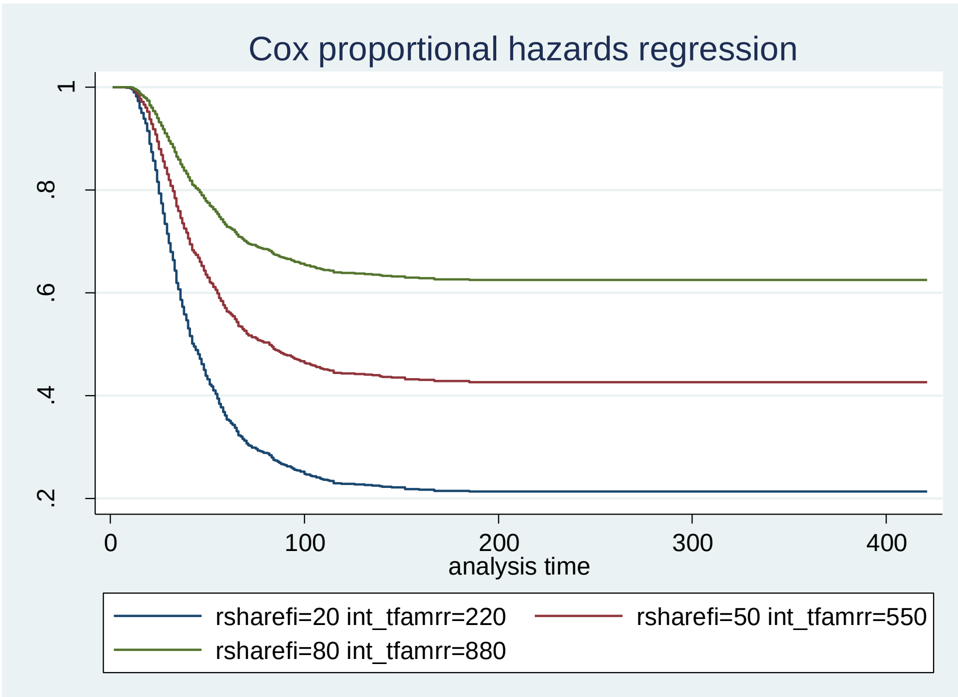

Figure 5 Predicted survival for second birth (model 3) by her share of family income for a log family income of 11