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Labor Force Participation, Cash-For-Care and Marriage in Norway

Jennifer A. Holland[1]

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Abstract

This study considers how within-couple economic dependency affects marital behavior. In 1998, the Norwegian government introduced a Cash-for-Care benefit scheme to reimburse parents for the cost of private care or providing childcare in the home. The program disproportionally encouraged home-based care, thereby incentivizing increased within-couple dependency and potentially making union formalization (through marriage) more desirable. Analyses of program participation, union status and union dynamics using Norwegian population registers demonstrate that more formalized unions are associated with higher rates of long-term program participation. Benefit receipt is also associated with an increased pace of marriage among cohabiting parents. This pace differential mirrors an increased pace of childbearing among long-term Cash-for-Care beneficiaries, suggesting that marriage may be a marker of particular stages in the family life-course rather than an institution of economic security among unmarried Norwegian parents.

[1] Department of Sociology, 1180 Observatory Drive, University of Wisconsin-Madison, Madison, WI 53706, USA. jholland@ssc.wisc.edu

1. INTRODUCTION

The economic situation of partners has long been established as a key determinant of marriage. However, the decision to marry is increasingly taken on by couples that already share a history, a home and, often, a child (Axinn and Thornton 2000; Heuveline and Timberlake 2004; Timberlake and Heuveline 2005; Wiik, Bernhardt and Noack 2009). It is likely that there are new economic dimensions affecting the timing of marriage among those in long-term, stable partnerships. Where it increasingly comes after the establishment of a household and childbearing, a key component of the modern day marriage decision may be the balancing of long-term economic risks between partners.

Potentially salient economic risks confronted over the family life-course are the opportunity costs associated with childbearing and childrearing. Lost wages, human capital deterioration and disruptions of career trajectories constitute economic risks for parents. Marriage provides an insurance mechanism through which individuals can pool risk and make claims on each other's future economic capacity. This may be particularly important when the opportunity costs of parenthood are not shared equally between partners, resulting in the economic dependency of one partner.

To explore the relationship between economic risks and dependence associated with childbearing and the transition to marriage, this study exploits a critical juncture in social policy when the Norwegian government introduced a Cash-For-Care benefit scheme in 1998. The Cash-for-Care (CFC) program provides a direct cash payment equal to the value of publicly provided care to parents who are not offered a place in public childcare or if parents wish to opt out of public care. This money can be used to pay for private care (at a private center or for child-minder services) or may be retained by the parents should they prefer to remain at home to care for their children. To the extent that parents use the benefit to provide care in the home, the program changes the incentive structure for parents: the benefit lowers the short-term, direct costs of childbearing but may increase opportunity costs and economic dependency between parents as one parent, most often the mother, reduces their labor-force participation to care for the child.

If marriage offers couples more economic security, we would expect an increased likelihood of marriage at the time of childbearing as women drop out of labor force and take-up the CFC benefit. The degree to which couples base their decision to marry on policy and

economic incentives will provide insight into the meaning of marriage: does marriage continue to be an economic institution or is it merely a lifestyle choice?

2. THEORETICAL BACKGROUND

2.1. *Within-couple dependency and marriage*

Interdependence, risk sharing and maximizing household utility through the pursuit of economies of scale are broadly noted as key aspects of formal long-term partnerships (i.e. marriage) (e.g. Becker 1981; Brines and Joyner 1999; Kotlikoff and Spivak 1981; Waite and Gallagher 2000). Marriage is distinct from alternative states, such as cohabitation or dating, in that it is both a legal and symbolic commitment to a long-term partnership. Cohabitation without marriage places few legal bonds on individuals and, even in the Nordic countries, it is considered indicative of a lower level of commitment between partners (Bernhardt 2002; Noack 2001; Wiik, Bernhardt and Noack 2009). Cohabiting couples do not enjoy all of the same rights and responsibilities as married couples, particularly with respect to economic distributions after separation or if one partner should die (Noack 2001; Noack 2010; Waaldijk 2005; Wiik, Bernhardt and Noack 2010). Through a marriage contract an individual formally establishes an economic bond to their partner. In the case of unequal economic standing of partners, marriage offers greater protection to the more economically vulnerable partner (Noack 2001; Noack 2010; Waaldijk 2005; Wiik, Bernhardt and Noack 2010). In the case of divorce, courts may require alimony payments (in addition to child support) if it is determined that one partner's financial circumstances were weakened as a result of marriage or caring for children (BLD 2010). Non-marital cohabiters are not subject to common ownership and maintenance obligations; in the case of dissolution of a cohabiting partnership, each partner retains individual ownership rights of individual property (BLD 2009).

The additional economic security offered by marriage is particularly salient for couples at the time of childbearing. It is increasingly common for both members of a couple to pursue labor-market careers, particularly within the Scandinavian context (Gornick and Meyers 2003). However, gender equality in the public sphere is not perfectly mirrored with respect to the private sphere. Women's increased labor force participation has not been matched with increased male participation in the home (Brines 1994; Greenstein 2000; Hochschild 1989). This imbalance is particularly striking once couples have children together (Rønsen 2001). A shared

child creates new costs of care that the couple must negotiate. These costs are direct, in the form of the increased financial burden of an additional family member to feed, clothe and diaper. The costs are also indirect, particularly associated with the time required to care for the new child. Within dual-earner couples, the time burden of childrearing represents an opportunity cost for parents: one or both parents must often forego earnings in order to care for their children. In addition to short-run reduction in earnings, reduced labor force participation is associated with long-run opportunity costs as well: dropping out of the labor force or dramatically reducing working hours may result in human capital deterioration and disruptions to life-course career and earnings trajectories (Sigle-Rushton and Waldfogel 2007).

Typically the opportunity costs of childbearing and childrearing are not equally distributed between parents. Although fathers are increasingly taking on caregiving roles, even in Scandinavia the largest share of the opportunity costs of care are taken on by women via a disproportionate uptake of parental leave and longer-term reductions of hours spent in paid work (Duvander 2008; Duvander and Johansson 2010; Lappegård 2010; Sigle-Rushton and Waldfogel 2007). The prevalence of within-couple economic dependency during the childbearing and childrearing years suggests a continued role for marriage in the family life course. To the extent that it offers greater economic security, marriage may continue to be an attractive option for couples in long-term committed partnerships, particularly when they are faced with opportunity costs of childbearing and childrearing and inequality in the distribution of long-run economic risk taking across partners.

2.2. The Norwegian context

2.2.1. Marriage in Norway

Over the past half-century there have been dramatic changes in the context, timing and character of marriage in Norway and in European countries more generally. Cohabitation has long been an institutionalized, stable, long-term union in Norway (Noack 2001). Nearly all unions begin as cohabitations and almost no marriages occur without a period of co-residence (Wiik 2009). A majority of people approve of childbearing and childrearing within cohabiting unions and since the early 2000s, the majority of first births occur in non-marital, co-residential partnerships (Bernhardt 2002; Heuveline and Timberlake 2004; Kiernan 2001; Noack 2010).

Although co-residence and childbearing increasingly occur outside of marriage, marriage continues to be a distinct and desired state and the majority of Norwegians do eventually marry (Bernhardt 2002; Bernhardt 2004; Noack 2010; Wiik, Bernhardt and Noack 2009; Wiik, Bernhardt and Noack 2010). Married couples tend to be more serious about and satisfied with their relationships, more committed to their relationships, and less likely to dissolve their unions (Liefbroer and Dourleijn 2006; Wiik, Bernhardt and Noack 2009). Married and cohabiting couples do not have the same guarantees of economic security should the couple separate or if one partner should die (Noack 2001; Noack 2010; Waaldijk 2005; Wiik, Bernhardt and Noack 2010). Only through marriage can an individual formally establish their right to make economic claims on their partner and gain the right to inherit their partner's wealth and assets.

2.2.2. Gender, Work, Care and Family Policy

The decision to formalize one's union in Norway takes place in a context of high gender equality: men and women have equal access to education and occupational opportunities and benefits and taxes are individualized, aiming to reduce dependency between partners. The gender wage gap in Norway is among the narrowest in the world. By the mid 1990s, women earned on average 87% of men wages (Waldfogel 1998). However, these numbers are dramatically different when we consider differences by marital status: while non-married women in Norway earn 90% of non-married men, married women only earn only 68% of married men's wages (Waldfogel 1998). The most important factor driving these differences is the proportion of mothers in each category: married women are much more likely to be mothers and, therefore, more likely to have reduced their working hours or to have sorted into lower-paying, "family friendly" jobs (Gornick and Meyers 2003; Petersen, Penner and Hogsnes 2007; Stier, Lewin-Epstein and Braun 2001; Waldfogel 1998).

In Norway, policies promote "dual-worker, dual-caring" families by allowing for sharing of the costs of care between families and the state (Gornick and Meyers 2003): there is generous extended family leave with wage replacement after the birth of a child and an extensive high-quality, state-run childcare system. The parental leave program provides 54 weeks (with 80% wage compensation) or 44 weeks (with 100% wage compensation) of leave after the birth of a child, with a cap on the maximum amount of benefit paid (approximately €40,020 in 2001) (Lappegård 2010). Receipt of parental leave is contingent upon mothers' employment in 6 out of

10 months prior to the birth of the child; if mothers to do not qualify for leave, they receive a lump sum payment at the birth of the child (approximately €4,700 or $6,700 in 2007) (Lappegård 2010). Part of the leave is reserved for the father, however their eligibility is contingent upon the mother's eligibility (i.e. her employment status in the 10 months prior to birth); in the period of analysis, 4 weeks of leave were reserved for the father (Lappegård 2010). As well as providing a direct payment proportional to pre-birth wages during the child's first year, the Norwegian parental leave program gives leave taking parents the right to return to her or his pre-birth job for two years after the birth of a child (Lappegård 2010).

The Norway government has also invested in an extensive publicly funded childcare system. The costs of the childcare program is shared by the state, municipalities and parent, however, the parental co-payments are quite substantial (approximately €440 or $704 per month in 1998; the parental share was subsequently reduced in 2006, but this is after the period considered in this analysis) (Lappegård 2010). While children are eligible for public childcare at the end of the parental leave period and universal access to childcare is a priority, there is no entitlement for care until school age (age 4). Access to childcare services varies greatly by location and in some locales supply shortages have created a private, unregulated "black market" for services (Gornick and Meyers 2003).

In 1998, the government introduced a Cash-For-Care (CFC) benefit scheme to pay for private care for those parents whose children were not offered a place in government care (Aassve and Lappegård 2009; Aassve and Lappegård 2010; Gornick and Meyers 2003). Parents who preferred to remain at home to care for their children could also claim this benefit. Parents may claim the benefit after the parental leave period, typically beginning when the child is 13 months old, for a total of 24 months. Benefit amounts are granted on a sliding scale relative to the proportion of time children are in publicly-funded childcare, with a maximum of $4,293 per year (Aassve and Lappegård 2009). The high cost of care and the availability of a cash benefit for parents who opt to remain at home create a strong disincentive for employment, particularly among women: nearly 96% of benefit recipients are mothers and there is evidence of lower labor force participation of mothers after the introduction of the cash benefit (Aassve and Lappegård 2009; Rønsen 2001; Schøne 2004).

Take-up of the CFC benefit increased from the introduction of the policy until 2003, when as many as 72% of parents received some cash benefit (Aassve and Lappegård 2009). In

subsequent years take-up declined as day-care supply increased (Aassve and Lappegård 2009). In 2002, 33% of all children aged 1-2 were in public or private kindergarten care and 44% received parental care; children who's parents received a cash benefit were less likely to receive kindergarten care (14%) and more likely to be cared for by parents (56%) (Pettersen 2003).

Aassve and Lappegård (2009; 2010) evaluate how take-up of the CFC benefit varies across subpopulations in Norway. Among one-child couples, married parents are 28% more likely to take-up the benefit, relative to cohabiting parents. The socioeconomic status of parents is also related to take-up. More highly educated parents are less likely to receive the benefit. Mothers with middle- and high-incomes before the birth are less likely to take the benefit, however there is an 'inverted U-shaped' relationship for father's pre-birth income: the lowest and the highest income fathers are less likely to take the benefit. With regard to the gender-balance of income prior to birth, rates of take-up are similar across the spectrum of parents' relative income, with one exception: the most gender unequal couples ("Mother's income less than 25% of father's income") are more likely to take-up the benefit than all other relative income groups. Overall these trends suggest that CFC benefits are less attractive to high socioeconomic status parents, perhaps due to the high opportunity costs associated with reduced labor force participation for home care. Additionally, there is some indication that the program does not serve the needs of those parents with the lowest incomes: having two earners may be an economic necessity for these couples and the benefit does not adequately compensate for lost wages should one parent remain home to care for the children. Finally, Aassve and Lappegård's (2009; 2010) finding of increased uptake among couples with economically dependent mothers suggests that selection into benefit receipt may be associated with couple's gender ideology.

The CFC program and childcare shortages in Norway provide an ideal context for evaluating the relationship between economic risks and dependence associated with childbearing and marriage. Broadly, if marriage offers couples more security and acts to compensate mothers for the opportunity costs incurred by reducing labor force participation to care for their children in the home, we would expect an increased likelihood of marriage with take-up of the CFC benefit.

3. HYPOTHESES

In two sets of analyses I consider relationships between union status and the CFC program. In the first analyses I consider the relationship between union status at the end of the birth year and subsequent take-up of the CFC benefit. In analysis two I consider union dynamics in relation to program receipt among parents cohabiting at the end of the birth year.

3.1. Analysis 1: Is marriage associated with higher benefit take-up?

If marriage allows for greater economic risk taking with respect to withdrawal from the labor force to care for children in the home, we would expect differential patterns of CFC benefit take-up by parental union status. Parents who have formalized their unions at the end of the birth year should be most likely to take the CFC benefit, as compared to cohabiting parents and parents living apart. While both cohabiting and non-co-resident parents lack legal rights to economic claims on their partners, there may still be differences in CFC program participation. Parents living apart, who have either not yet made the decision to co-reside or who have dissolved their union by the end of the birth year, are likely to be in the least committed relationships and therefore would be expected to be least likely to take-up the cash benefit.

> H1a: Married parents will be most likely to take CFC benefits; parents living apart will be least likely to take the benefit.

Among parents who marry in the year following the birth of the child, the decision to formalize their union may be directly related to anticipating program participation. Parents unmarried at the time of the birth who intend to participate in the CFC program may anticipate the mother's continued reduced labor force participation and pursue more secure and stable formalized union status in advance CFC program participation. Couples who marry in the months between childbirth and CFC eligibility would therefore be more likely than either their married or unmarried counterparts to take the benefit.

> H1b: Recently married parents will be most likely to take CFC benefits as compared to all other parents.

It is possible that the relationship between union status and the duration of benefit receipt may not be linear. Aassve and Lappegård (2010) find evidence that there are differences in transition to second birth by duration of benefit receipt and the authors identify three types of benefit recipients. Work-oriented parents receive only short-term CFC benefits (1 to 6 months). These beneficiaries use CFC as a stop-gap to cover the period from the end of the parental leave period until a place opens up in public childcare (typically by the beginning of the subsequent school year). These parents fully intend to return to the labor force, but the unavailability of childcare requires that they reduce their hours or stop working until childcare can be secured. Mixed-orientation beneficiaries, who take medium-term benefits (7-12 months), have preferences for both home-based care and labor market participation. In effect, mixed-orientation beneficiaries use the benefit to extend the parental leave period for an additional year (thought the period of job protection) even though, in most cases, the value of the CFC benefit is lower than the parental leave benefit. Finally, family-oriented beneficiaries take longer-term CFC benefits (13 to 24 months). Because these parents forgo the right of return to their previous employment position, they take on the most risk and are the least attached to the labor force.

As these categories are associated with particular economic risk taking strategies, they may also be salient for an analysis of marriage. Job protection and differences in parental expectations regarding the return to paid employment may mean the different durations of benefit are associated with higher or lower levels of economic risk for couples. Consequently there may be differential associations between union status and the duration of CFC program uptake. Because there are higher opportunity costs associated with longer benefit receipt, differences in patterns of long-term take-up (13 to 24 months) would likely be more pronounced among parents married at the end of the birth year as compared to cohabiting or non-co-resident parents. On the other hand, short-term benefit take-up may be due to exogenous factors (rather than family orientation), such as the lack of an opening in public childcare. Therefore, there may be smaller differences in uptake by union status for short benefit durations (1 to 6 months).

H1c: Differences in uptake by union status will be more pronounced among long-term than among short-term beneficiaries.

3.2. Analysis 2: Does receipt affect the marital behavior of unmarried cohabiting couples?

If marriage is compensatory for economic risk taking associated with childcare, we would expect differential marriage behavior among parents conditioned upon their receipt of the CFC benefit. We would expect higher marriage risks among parents during periods when the CFC program increased incentives for mothers to reduce their labor force participation and care for their children in the home. Parents of children aged 1 to 3 should experience higher risks of marriage concurrent with the receipt of the CFC benefit, as compared to parents of similarly aged children who do not take-up the benefit.

> H2: Marriage risks are higher among Cash-for-Care recipients than non-recipients.

4. DATA

Data for these analyses come from Norwegian population registers covering the period 1997 to 2005. Firstly, all live first births in Norway between 1997 and 2000 are identified and the children linked to their parents. The sample includes only singleton births that are the first common child of the couple and the first birth of the mother. While marriages are entered into vital registers, there is no residential register of non-married cohabiters in Norway nor do the registers contain information on partnership status of individuals sharing a common address (i.e. no differentiation between roommates and cohabitors). However, once couples have a shared child, parents' cohabitation status can be determined based on each parent sharing a common address with the child. Although some parents registered as living apart may be romantically involved, the population registers do not capture relationship status and thus we cannot distinguish parents who have dissolved their unions from those simply living apart. Residential information is updated annually in December.

Parents' demographic data are then merged with economic and education information from the tax and educational registers, respectively. Finally, information on cash benefit take-up and parental leave receipt is drawn from the Norwegian Labor and Welfare Organization databases. Because some measures, including union status, are only captured once a year, in order to have uniform exposure durations the sample is restricted to parents with children born in January (6,986 parents).

Because the outcome of interest in analyses 2 is the transition to marriage, the sample for this analyses is restricted to unmarried parents co-residing at the end of the birth year (2,884 cohabiting parents, approximately 41.3% of the total 6,986 January births between 1997 and 2000).

5. MODELS AND RESULTS

5.1. Analysis 1: Union Status and Benefit Take-up

5.1.1. Models and key covariates

For the analysis of the relationship between union status and CFC benefit receipt I estimate discrete-time, competing-risk models (multinomial logistic regression). The model takes the form

$$\ln \frac{\hat{\pi}_{ij}}{\hat{\pi}_{iJ}} = a_j + \boldsymbol{X}_i \beta_j \qquad (1)$$

where the dependent variable is the log of the odds of particular durations of CFC benefit receipt (j = 1 to 6 months of benefit, 7 to 12 months of benefit, 13 to 24 months of benefit) relative to no benefit taken (reference category *J)*, a_j is a constant and β_j is a vector of regression coefficients for individuals i. The analysis sample consists of all parents of children born in January between 1997 and 2000, and thus eligible for the full 24 benefit months of benefit. The key independent variable of interest captures parental union status at the end of the birth year: married previous to birth (reference category), married during the year of birth, cohabiting at the end of the birth year and living apart at the end of the birth year (a heterogeneous category that includes both romantically involved and separated parents).

5.1.2. Additional covariates

Beyond the key indicator discussed above, I include a variety of covariates to capture the heterogeneity of union status and cash benefit uptake. I include demographic indicators for mother's age at birth and age at birth squared. While the registers do include information on parents' foreign-born status, very few couples with at least one foreign-born parent were observed to be cohabiting at the end of the birth year (<6%). Because including foreign-born

status in these models produced unstable estimates, this variable was omitted from the final models.

It has been widely demonstrated that patterns of marriage, cohabitation and union dissolution vary across aspects of socioeconomic status, such as education and economic attainment (Becker 1981; Holland 2008; Manning and Smock 1995; Oppenheimer, Kalmijn and Nelson 1997; Smock and Manning 1997; Sweeney 2002; Wiik 2009). Further, Aassve and Lappegård (2009; 2010) demonstrate that use of the CFC program varies dramatically by socioeconomic status, as proxied by educational attainment.

A set of categorical variables for each parent captures the highest level of schooling completed at the time of the first birth: less than secondary, secondary (reference category), lower tertiary, upper tertiary (including advanced professional and academic degrees) and an indicator for missing educational attainment information. Because patterns of parent's labor force participation may be disrupted in the year of birth, I include a logged measure of the three-year average pre-birth income of the couple to capture parent's broader-term economic status.[2] This income includes earnings as well as income from non-employment sources (rental properties, pensions, etc.) and government transfers such as family leave and unemployment benefits. I tested several specifications of the measure, including separate specifications of parental income, father's only and mother's only as well as non-linear (spline) specifications. I found that a quadratic, joint-income specifications produced the best fitting model (log-likelihood, AIC and BIC tests; results not shown).

In order to differentiate the individual contribution of each partner to household income, I construct a measure of within-couple relative income. Previous studies have demonstrated strong associations between relative economic standing of partners and particular union statuses and transitions (Brines and Joyner 1999; Clarkberg, Stolzenberg and Waite 1995; Duvander 1999; Heckert, Nowak and Snyder 1998; Kalmijn, Loeve and Manting 2007; Kravdal 1999; Ono 1998; Ono 2003; Wiik, Bernhardt and Noack 2010). The relative income measure used here is constructed based on Sørensen and McLanahan's dependency ratio (Sørensen and McLanahan 1987),

[2] Because the registers only capture non-marital cohabitation once the couple has a shared child, we do not know if the couple was indeed cohabiting or romantically involved over the entire 3-year period previous to birth. Despite this drawback, the variable is still informative about parents' economic prospects over the life-course and allows for smoothing of annual income differentials.

$$RINC = INC_M/(INC_M + INC_W) - INC_W/(INC_M + INC_W) \quad (2)$$

where INC_M and INC_W are the man's and woman's three-year average pre-birth income, respectively. A relative income ratio of 1 indicates that all of the couple's income is contributed by the man, while a relative income ratio of –1 would indicates that all of the couple's income is contributed by the woman. A ratio of 0 would indicate equality of incomes. From this relative income measure, I create a set of categorical variables indicating: mother contributes much more than father (RINC ≤ -0.55), mother contributes a little more than father (-0.55 < RINC < -0.1), mother and father contribute equally (-0.1 ≤ RINC ≤ 0.1), father contributes a little more than mother (0.1 < RINC < 0.55), father contributes much more than mother (RINC ≥ 0.55), and an indicator for missing mother's and/or father's income.

There may be particular underlying characteristics of parents that make them both more likely to marry, reduce their labor force participation and take-up the cash benefit. While it is impossible to fully capture all such unobserved characteristics of parents, I include two sets of variables to better distinguish parental disposition toward particular union statuses and the CFC benefit. It is likely that parents with traditional gender-role orientation will be more likely to marry and to care for children in the home. I account for differences in gender-role preferences by including an indicator for father's uptake of parental leave, differentiating between those couples in which the mother took all of the parental leave and those in which the father took part of the leave.[3]

Parents' preferences for home-care and marriage may also be linked by other underlying dimensions beyond gender-role orientation. In order to better identify treatment effects of the CFC benefit, I use regional variation in availability of childcare. In municipalities with childcare shortages, couples receiving the cash benefit are less selected than those parents that take the benefit in a context where public childcare is widely available. I proxy for childcare shortages using an indicator for the proportion of children aged 1-2 in public care in the parents' municipality of residence: less than 25%, 26-35%, 36-45%, 46-55% and 56% or more. While it

[3] I also tested a specification that differentiating couples in which the mother took all of the leave, those in which the father took only the "father quota" and those in which the father took more than the "father quota." In relation to marriage, the main effect seems to stem from whether the father took any leave at all, not in the amount of leave taken by the father.

is possible that low coverage indicates regional preferences for home-based care, given strong preferences for public care in Norway overall, low coverage is more likely to indicate that capacity is not meeting demand (Lappegård 2010).

5.1.3. Descriptive statistics

Table 1 provides descriptive statistics for the analysis of the level of CFC benefit take-up, including descriptive statistics by each benefit level (no benefit, 0 to 6 months, 7 to 12 months and 13 to 24 months) as well as for the pooled analysis sample ("Total"). Across the four take-up groups, the majority of parents married at the end of the birth year were also married at the time of the first birth (33% of all parents and 82% of parents married at the end of the birth year). Underlying the overall statistics on union status at the end of the birth year are differences by CFC benefit take-up. Those living apart constitute a larger proportion of parents that do not take the CFC benefit (33%). The share of cohabiting couples increases with increasing CFC program participation: while only 31% of non-beneficiaries were cohabiting at the end of the birth year, nearly 45% of beneficiaries taking 13 to 24 months of benefit. Marriage distribution patterns are more discontinuous: nearly 45% of parents receiving 1 to 6 months of CFC benefits are married, while approximately 40% and 36% of parents taking 7 or more months or no benefit are married, respectively. This overall pattern is driven by the proportion of parents are married at birth. Among parents who marry during the birth year, there is a weak positive association between number of months taken and proportion recently married.

Overall the distribution of birth years is balanced over the pooled sample, however parents of children born in 1997 were less likely to take the benefit compared with other birth years. While the introduction of the benefit was widely publicized, parents of children born in the year before the program launched may have had less opportunity to learn about the program. Overall, the majority of mothers were in their twenties when they had their first birth (68.1%). However, there is a negative association between age of mother and duration of benefit: only 22.8% of mothers receiving 13 to 24 months of benefit were over the age of 30 at birth as compared with 36.7% of non-beneficiaries. There is a negative association between education and benefit uptake. Longer term beneficiaries tend to be less educated overall: two-thirds of mothers and three-quarters of fathers who took 13 to 24 months of the benefit had completed only secondary education or less at birth. This is compared to 42% and 47.5% of short-term

beneficiary parents (1 to 6 months) and 38% and 43% of non-recipient mothers and fathers, respectively.

There is a non-linear association between couple income averaged over the three-years previous to birth: for those parents that 12 months or less of the benefit there is a positive association between income and number of months taken; however, three-year average couple income is markedly lower among 13 to 24 months recipients (although with a smaller standard deviation around the mean). Benefit uptake and the duration of benefit are both positively associated with relative income contributions: among less than half of non-beneficiaries (43%) and the shortest-term beneficiaries (1 to 6 months; 47%) did the father earn more than mother in the three years previous to birth but among the longest-term beneficiaries (13 to 24 months) nearly two-thirds of fathers earned more than the mother. Father's take-up parental leave is balanced across categories of receipt with the exception of a slightly higher proportion of parents taking no leave among 1 to 6 month beneficiaries. Those who do not take the CFC benefit are slightly less likely to take family leave benefits. Finally, there is some variation in overall child care coverage of 1 to 2 year old children across beneficiary categories. As we might expect, longer-term beneficiaries are more likely to live in municipalities with lower-than-average levels of childcare coverage. Non-beneficiaries are more likely to live in municipalities with high childcare coverage. It is notable, however, that non-beneficiaries are also more likely to live in municipalities with 0 to 25% coverage as compared to beneficiaries.

Tables 2a – 2c present coefficients from discrete-time, competing-risk models of benefit duration conditioned upon union status at the end of the birth year.

5.1.4. 1 to 6 months versus no benefit take-up

Table 2a presents coefficients on taking 1 to 6 months of the benefit versus taking no benefit from competing-risk models of different duration of benefit take-up conditioned on union status at the end of the birth year. Model 1 includes only coefficients on parental union status at the end of the birth year. Parents who are living apart at the end of the birth year are about half as likely to take-up the benefit for a short period as compared with those couples who were married at the time of the birth. While there is also a seemingly lower risk of short-term take-up among those couples who married during the birth year or were cohabiting at the end of the birth year, these coefficients are not statistically different from the comparison category. There may be

differences in the characteristics of couples across benefit and union status categories so it is important to take demographic and socioeconomic characteristics, the gender orientation and regional context of couples into account in these models of differential uptake. These characteristics are captured in Models 2 through 6. In the final model (Model 6) parents living apart are still at a 32% lower risk of short-term uptake as compared to couples married at the time of birth. Differences in education among recipients and non-recipients account for some of the negative relationship between living apart and short-term benefit uptake; other couple and contextual characteristics do not have strong mediating effects on this direct relationship. Cohabiting and recently married couples remain indistinguishable from couples married at birth after taking couple characteristics into account.

5.1.5. 7 to 12 months versus no benefit take-up

Table 2b presents coefficients on taking medium-term benefits (7 to 12 months) versus taking no benefit from competing-risk models of different duration of benefit take-up conditioned on union status at the end of the birth year. Model 1 includes only coefficients on parental union status at the end of the birth year. Consistent with models of short-term take-up, cohabiting parents and those parent who married in the year after birth are statistically indistinguishable from parents married at birth with respect to their risk of medium-term benefit receipt. So too is there a strong negative relationship between parents living apart and benefit uptake: parents who are not living together at the end of the birth year are 47% less likely to take 7 to 12 months of the benefit as compared to parents married at first birth. The magnitude of the negative relationship is robust to accounting for mother's age at birth, but is diminished by half when including the educational attainment of parents at birth. The coefficient is further reduced to non-significance when taking into account the three-year average income of parents previous to birth. We may conclude, then, that differences in uptake of medium-term benefits are driven largely by differences in socio-economic characteristics across union statuses.

5.1.6. 13 to 24 months versus no benefit take-up

Table 2c presents coefficients on taking long-term benefits (13 to 24 months) versus taking no benefit from competing-risk models of different duration of benefit take-up conditioned on union status at the end of the birth year. Model 1 includes only coefficients on parental union status at

the end of the birth year. Once again we find that parents living apart are the least likely to take long-term benefits. However, an additional finding of a higher risk of uptake among cohabiting couples emerges in the baseline model: as compared with parents married at birth, parents cohabiting at the end of the birth year are 29% more likely to take long-term CFC benefits (versus no benefit). This positive result is fully accounted for by differences in the age of mothers at birth. Further, a negative relationship between cohabitation and up-take emerges when we take into account parent's highest education level completed at birth. We find that cohabiting couples tend to be younger and less well educated and may, therefore, be selected into long-term benefit take-up. Once accounting for all couple demographic, socioeconomic, ideational and contextual characteristics, we find a clear negative association between the level of union formalization and long-term CFC benefit receipt: couples in the most formal unions (married at birth or married in the birth year) are the most likely to take long-term benefits; cohabiting couples are 20% less likely to take the benefit (as compared to couples married at birth); and parents living apart are least likely to take long-term benefit (65% less likely than couples married at birth).

5.1.7. Covariates

In general, few covariates on demographic, socioeconomic, gender ideology and regional context are associated with the uptake of short-term CFC benefits (1 to 6 months) versus taking no benefit. However, we do find that families living in municipalities with the highest level of childcare coverage for 1 and 2 year old children are less likely to receive short-term CFC benefits. This result is unsurprising as parents who take the benefit for 6 months or less are typically work-oriented, using the benefit until a place in childcare can be secured. Indeed it is likely that parents in these high-coverage municipalities do not face childcare shortages and parents are able to easily arrange for placement at the end of the family leave period. Higher income couples are marginally more likely to take short-term benefits. It is notable that apart from this marginal effect, other educational and relative income measures are not associated with short-term benefit take-up. Finally, there is a puzzling result on the relationship between short-term CFC and family leave take-up: those parents who take no family leave in the birth year of the child are 62% more likely to take the cash benefit for short durations.

In the analysis of medium-term CFC benefit receipt we see the emergence of differences in take-up by socioeconomic status. There is a negative overall association between education and medium-term benefit uptake, but only the coefficient on women's higher tertiary education reaches even marginal significance (37% lower risk of medium-term take-up). Further there is a positive association between women's relative income and take-up, but only the coefficient indicating couples with the most dependent women reaching marginal significance (32% higher risk of medium-term take-up). We find continued evidence of the role of childcare availability: as with short-term take-up, parents living in municipalities with the highest level of childcare coverage for 1 and 2 year old children are less likely to receive medium-term CFC benefits as compared to those in municipalities with the lowest levels of coverage. Interestingly, there is also a higher level of uptake among parents in municipalities with 26 to 35% coverage as compared to municipalities with 25-or-lower percentage of young children receiving childcare.

Differences in take-up by socioeconomic status are most pronounced when comparing long-term (13 to 24 month) recipients versus non-recipients. A dramatic negative relationship between educational attainment at birth for both mothers and father is evident. There is an 'inverted-U-shaped' relationship between couple income previous to birth and long-term CFC benefit receipt: among low income couples, an increase in 3-year previous to birth average income is positively associated with long-term take-up, but among higher income couples, an increase in average income is associated with lower take-up. Additionally, there is a pronounced positive relationship between women's relative income and long-term take-up: as compared to couples with about equal incomes, couples are 26% and 213% more likely to take long-term benefits if the father contributes a little more (10% to 55% more) or much more (greater than 55% more than his partner) of the income, respectively. There is little evidence of a gender ideology effect when comparing couples in which the father takes some leave versus those where the mother takes all of the leave. However, among couples that take no parental leave, there is markedly lower take-up for long-term CFC benefits. Finally, with respect to long-term benefits versus no benefits taken, the relationship between the childcare coverage of 1 and 2 year old children in parents' municipality of residence is strongly negative.

5.2. Analysis 2: Benefit Receipt and Union Transitions

5.2.1. Models and key covariates

For the analysis of the relationship between CFC benefit take-up and union transitions I estimate discrete-time, competing-risk models, also of form shown in equation (1). Here the dependent variable is the log of the odds of categories of union status (j = marriage, separation) relative to continued non-marital cohabitation. The analysis sample consists of all cohabiting parents of children aged 13 to 36 months and born in January between 1997 and 2000. Because each cohabiting couple can contribute up to two observation periods to the analysis (when their children are 13 to 24 and 25 to 36 months old), standard errors are corrected for clustering. The key independent variable within the vector β_j is an indicator for any CFC benefit received in the previous year. While the registers do contain information on which parent (mother or father) receives the benefit, the proportion of fathers receiving the benefit is small (<2%, overall) and gender differentiated models produce unstable estimates. In addition to taking account of benefit receipt, I distinguish if it was the first (1-12 months) or second (13-24 months) year of receipt. While these models of the association between receipt and union status consider the competing risk of marriage or separation versus continued cohabitation, because the outcome of interest is marriage, I do not discuss results on separation.[4]

5.2.2. Additional covariates

As with the analysis of uptake, I include a variety of covariates to capture the heterogeneity of CFC program participation and union transitions. As above, I include indicators for mother's age at birth and age at birth squared. In these models I also include a variable to indicate if the couple has had a subsequent birth. In order to capture variation across socioeconomic status I include measures of both parents educational attainment at birth, income and within-couple dependency as discussed in reference to the previous analysis. In addition to the measure of three-year average pre-birth income, I include a measure of logged previous year combined-couple income and a squared term to allow for nonlinearities in the relationship between income and union transitions. As with the three-year average pre-birth income, the annual income measure includes earnings, income from non-employment sources and government transfers. In

[4] Tables including the coefficients on separation relative to continued cohabitation are presented in Appendix Table A1.

this analysis, the relative income measure is constructed in the same fashion as presented in equation 2, but now captures relative income in the previous year rather than prior to birth.

Changes in within-couple economic interdependence, likely generated by women's changing labor force participation after birth, may be associated with both union status transitions and CFC uptake. The Norwegian registers do not include reliable information on employment status or job characteristics. Instead, for the analysis of union transitions conditioned on benefit receipt I generate a proxy measure of mother's labor force participation using information about pre- and post-birth income. I calculate the ratio of previous year's income to the pre-birth three-year average income and generate an indicator variable for mothers with income ratios of greater than 0.75. While there is no way to determine if a mother returned to her previous job, changed jobs or changed her working hours, this measure will likely identify women that return labor force with at least a similar level of earnings.

Finally, to capture some of the unobserved characteristics of parents that might make them more likely to marry, reduce their labor force participation and take-up the cash benefit, I include the measures of gender-role orientation, as proxied by father's uptake of parental leave and regional variation in availability of childcare as discussed above. With respect to gender-role orientation, it is notable that in this analysis of union transitions of cohabiting parents and CFC benefit receipt, the most traditionally-oriented parents are largely selected out of the sample as they likely would marry before the birth.

5.2.3. Descriptive statistics

Table 3 presents descriptive statistics for the analysis sample in models of the relationship between CFC benefit receipt and the risk of marriage or separation versus continued cohabitation among parents cohabiting at the end of the birth year. Across the two years of eligibility 19% of cohabiting couples formalize their unions through marriage, approximately 20% in the first 12 months and an additional 17% in the second 12 months. Eighty percent of the sample takes some cash benefit over the period, with a smaller proportion taking more than one year of the benefit (70%). The sample is largely equally distributed across the birth years and age of mother at birth, with three-quarters of mothers in their twenties at birth. Across the two years, nearly a quarter of parents have a subsequent birth in the period of observation: 10.7% in the first year and nearly 37% in the second year.

One-fifth of parents (both mothers and fathers) have not completed secondary schooling and about half have a secondary degree. Mothers are slightly more educated than fathers, with about 30% and 23% holding a tertiary degree, respectively. Three-year average earnings previous to birth were about 359,172 NOK (approximately $40,766); however because average pre-birth earnings rise over the two years of observation, we might conclude that economic status previous to birth may be associated with selection out of cohabitation (either through marriage or separation). The average previous year's earnings in the pooled sample are 410,379 NOK (approximately $46,578). There is an increase in previous year combined couple earnings in the two years of observation; however we cannot conclude if this is due to selection out of the pool of cohabiters or increased earnings trajectories over the life course. Among most couples, the father contributes a larger proportion of earnings in the previous year: the father contributes the majority of income in 77.7% of families, mother and father contribute approximately equal proportions of income in 13.4% of families and the mother contributes the majority of income in only 8.5% of families. This overall picture does mask one change between the two years: between the first and second years of observation there is a shift from fathers contributing a little more income to fathers contributing much more of the couple's income. Otherwise, the distribution of relative income is quite stable over the two years observed. There is evidence that more women are employed at levels similar to those prior to first birth in the second as compared to the first year samples: when their firstborn child is 13 to 24 months old, approximately 65% of women in cohabiting couples have incomes equal to at least 75% of their 3-year average pre-birth income; this proportion increases to 74% in the following year.

Most fathers in the sample take some parental leave in the year after their first shared birth (60.3%), although a non trivial proportion of parents take no leave at all (17.2%). Finally, child care coverage for 1-2 year olds in the municipality of residence varies dramatically across the sample: about 12% of parents live in municipalities in which 0-25% of children in this age range have slots in childcare, 35% have 26-35% coverage, one-quarter have 36-45% coverage, one-fifth have 46-55% coverage and only 7% have more than 55% coverage.

5.2.4. Marriage versus continued cohabitation

Table 4 presents coefficients on marriage versus continued cohabitation from discrete-time, competing-risk models of union transitions conditioned on CFC program receipt. Model 1

includes only coefficients on CFC benefit receipt and year of birth. Cash benefit receipt is associated with a higher risk of marriage, but only in the first year of receipt (when the child is aged 13 to 24). These beneficiary parents are at a 21% higher risk of marriage relative to parents who did not take the benefit when their child was 13 to 24 months old. One year later, however, non-recipient parents "catch-up" to their beneficiary peers: during these months non-recipients are 41% more likely to marry relative to non-recipients in the previous year and 64% more likely (1.41 / 0.86 = 1.64) then beneficiary parents with similarly aged children.

This pattern of earlier marriage among CFC benefit recipients and later marriage for non-beneficiaries is robust to the addition of covariates on couple characteristics (Models 2 through Model 7). When including all additional characteristics in the models (Model 7) we find that first year beneficiaries are at a 26% higher risk of marriage. However, non-beneficiaries continue to have a higher risk of marriage in the following year as compared to both non-beneficiaries in the previous year (1.36, marginally significant at the 90% level) and beneficiaries with similarly aged children (1.36 / 0.77 = 1.77).

5.2.5. Covariates

Table 4 also presents information on the relationship between couple characteristics and union transitions. Marriage risks are stable across child's birth year. Mother's age at birth is positively associated with marriage, although the association is diminished at higher ages. Experiencing a subsequent birth increases marriage risks. There is a positive relationship between education and marriage, relative to continued cohabitation, for both mothers and fathers (although not all categorical indicators reach statistical significance).

The relationship between couple income and marriage is non-linear, varying across the income distribution. Previous year's income is negatively associated with marriage, but the positive squared term suggests a 'U-shaped' relationship: increases in income among low-income couples reduce the risk of marriage versus continued cohabitation; among those couples with high levels of income, increases in income are positively associated with marriage. While the coefficient on pre-birth economic status suggests a positive relationship to marriage, it is not statistically significant.

Relative income and women's return to the labor force are not significantly associated with marriage. There is little change in coefficients on CFC participation and in the R^2 measure

after adding these two components to the model so we may conclude that they explain little of the relationship between CFC and union status or the variation in marriage patterns over this period. Gender orientation (as proxied by father's take-up of parental leave) and regional context of childcare coverage also explain very little of the variance in marriage behavior. However, although coefficients are not independently statistically significant with respect to the risk of marriage, these characteristics do absorb some of the association with CFC program participation when the child is 13 to 24 months old, suggesting that indeed some of the association between cash benefit receipt and marriage may be driven by selection on linked preferences for childcare in the home and marriage.

6. DISCUSSION

This study considered how economic risk-taking and the balance of the opportunity costs of childbearing and childrearing are associated with union formalization (i.e. marriage) in modern-day Norway. I focus on a particular policy intervention that offers a cash benefit to compensate parents for the cost of private childcare or for parental care of children in the home. It has been demonstrated elsewhere that the majority of parents who take the benefit do indeed opt for home-based care (Aassve and Lappegård 2009; Rønsen 2001). Consequently, although the CFC benefit may offset short-run costs of care, it creates a situation of increased dependency within couples and higher individual opportunity costs in the long run for the parent who opts to reduce labor force participation to stay home to care for their children (almost universally the mother) (Aassve and Lappegård 2009; Schøne 2004).

I considered two key questions: 1) if more formal unions and more recently formalized unions are associated with greater benefit uptake and longer durations of benefit receipt and 2) how CFC program receipt relate to union formalization among cohabiting couples.

Differences between union status and uptake were most pronounced in models of the risk of long-term (13 to 24 months) benefit receipt. It is notable that after the first year of benefit (the child's second year), parents no longer enjoy job protection under Norwegian parental leave laws. Furthermore, longer term absences from the labor market may be associated with higher levels of skill deterioration. As a result, we would expect these beneficiaries to privilege more formal unions in order to share economic risks across the couple and insure against the higher opportunity costs associated with longer benefit receipt. In part consistent with hypothesis 1a,

there was a clear gradient in the risk of benefit uptake across categories of union status at the end of the birth year, but only with respect to long-term benefit receipt: married parents were most likely to take-up long-term CFC benefits, parents living apart were least likely to take the benefit and cohabiting parents' risk of uptake fell in-between. There was no evidence of differences between recently married parents and parents who married before the birth of the child, as hypothesized (1b). This finding was consistent across duration categories, suggesting that it is marital status itself, not the timing of the marriage, which seems to matter for benefit uptake.

The union status gradient in take-up was indeed most pronounced among long-term beneficiaries, consistent with hypothesis 1c. Differences between union status categories and take-up were not as dramatic when considering short- and medium-term benefit take-up. Only those parents living apart could be distinguished as having a lower risk of short-term benefit take-up (as compared to no benefit taken), partially confirming hypothesis 1a. Inconsistent with hypothesis 1a, cohabiting couples were no less likely to take short-term benefits versus parents married prior to the birth. Short-term take-up of CFC benefits may to a larger extent be due to exogenous factors, such as the unavailability of public childcare, as opposed to family orientation. The largely null findings on the relationship between short-term take-up and socioeconomic status also support the conclusion that these beneficiaries are a less selective group. Apart from a marginal positive effect of couple's pre-birth income, measures of socioeconomic status (such as education and relative income) were not associated with short-term benefit take-up. Socioeconomic differences only emerge at higher benefit duration levels. This is consistent with the idea that work-oriented parents, who use the benefit only to bridge the gap from the end of the parental leave period until a spot opens in public childcare, are less selected on characteristics (specifically socioeconomic status) as compared with mixed- and family-oriented parents, who remain at home to care for their children for longer durations.

There were no differences across union status in the risk of taking medium-term benefits, a finding inconsistent with hypothesis 1a. Medium-term beneficiaries are likely to be mixed-orientation couples, with preferences for extending the parental leave period to care for their children in the home but not at the expense of the right to return to the job held before the childbearing period (Aassve and Lappegård 2010). Take-up of 7 to 12 months of the CFC benefit was largely contingent upon socioeconomic status. The 'inverted-U-shaped' relationship between income and uptake suggests that for the lowest income couples, reducing labor force

participation to care for children in the home is simply not affordable. However, with increased couple income, parents can increasingly afford to take advantage of the CFC program. Continued absence from the labor force seems to be less attractive to the highly educated (women) and higher income couples. While the CFC benefit and legal rights to job protection in the child's second year may offset some of the opportunity costs associated with home care for middle-income families, the benefit is not sufficient wage compensation for the most well-off. Additionally, it is possible that preferences for public or private care may vary by socioeconomic status, although I was not able to measure such preferences with these data.

The second set of analyses focused on how the program participation affects union dynamics, considering transitions to marriage among couples cohabiting at the end of the birth year. Analyses of the relationship between benefit take-up (i.e. receipt) and marriage, rather than showing an overall increased risk of marriage as predicted in hypothesis 2, indicate a substantial pace differential in the transition to marriage among beneficiary parents: parents taking the cash benefit when their child is 13 to 24 months old are 26% more likely to marry; however, parents still unmarried and taking the benefit when their child is between the ages of 25 and 36 months are 43% less likely to marry as compared to parents of similarly aged children who do not take the benefit. This lower risk of marriage in the second benefit year may be partially explained by a faster transition to the second birth among longer-term Cash-for-Care recipients (demonstrated by Aassve and Lappegård 2009; Aassve and Lappegård 2010). Beneficiary parents seemingly choose to either marry quickly between births (as evidenced by the higher rate of marriage after the first year of benefit receipt), or (if they marry at all) they wait until completing their childbearing, not marrying after the second year of benefit receipt when they may be more likely to be pregnant or to have just given birth to their second child.

In general these results suggest that union status is only somewhat linked to economic dependency and risk taking generated by the process of childbearing and childrearing in the Nordic context. More formal unions are indeed associated with longer CFC program take-up, as demonstrated in the first analysis. However, the largest differentiation is between co-resident and non-co-resident parents, as demonstrated by the low risk of take-up among parents living apart at the end of the birth year. This result is further evident in the weak findings on the transition to marriage among cohabiting parents in the analyses of CFC receipt and union transitions. Indeed, with respect to analyses two, increased economic dependency associated

with reductions in labor force participation and take-up of the CFC benefit are not strongly related to the timing of marriage among cohabiting parents in Norway.

In this context, with respect to perceived union security and stability, the differences between cohabitation and marriage may only be negligible, particularly when the couple has expressed their commitment to one another by having a child together. Furthermore, to the extent that couples plan their births and have particular expectations about who will take on the larger share of economic opportunity costs associated with childrearing, the association between dependency and union status may already be apparent before the birth of the child. Models of union transitions fail to capture marriage that occur in anticipation of child birth; such an analysis would be impossible to conduct with register data, as one cannot identify cohabiting couples without shared children nor do they include childbearing intentions. Furthermore, extensive governmental supports for families in Norway may reduce the perceived risks associated with reduced labor force participation in the childbearing years. Through generous family support policies, the state may somewhat "crowd-out" the marital union as an institution insuring against long-term risk and economic dependency.

What then is the role of modern day marriage in Norway? One possible answer comes from the analysis of the relationship between CFC benefit receipt and union transitions. There is some evidence of an indirect effect of the program on marriage timing through changes in the pace of childbearing. These results lend support to the idea that modern-day marriage in Norway is less an institution valued for the economic protection it offers but rather may be a marker of particular stages of the family life-course.

7. TABLES

Table 1 Characteristics of parents by Cash-for-Care benefit take-up, January first births, Norway 1997–2000

	No CFC		1-6m of CFC		7-12m CFC		13-24m CFC		Total	
	N	Per cent	N	Per cent	N	Per cent	N	Per cent	N	Per cent
Union Status at end of birth year										
Married at birth	313	29.8	183	38.8	343	33.0	1476	33.4	2315	33.1
Married in birth year	67	6.4	28	5.9	76	7.3	318	7.2	489	7.0
Cohabiting	325	30.9	159	33.7	419	40.4	1981	44.8	2884	41.3
Non-residential/separated	347	33.0	102	21.6	200	19.3	649	14.7	1298	18.6
Year of birth										
1997	517	49.1	149	31.6	256	24.7	951	21.5	1873	26.8
1998	178	16.9	107	22.7	276	26.6	1192	26.9	1753	25.1
1999	172	16.3	109	23.1	264	25.4	1139	25.7	1684	24.1
2000	185	17.6	107	22.7	242	23.3	1142	25.8	1676	24.0
Age of mother at birth										
< 20	48	4.6	25	5.3	41	3.9	208	4.7	322	4.6
20 to < 25	223	21.2	78	16.5	217	20.9	1420	32.1	1938	27.7
25 to < 30	395	37.5	184	39.0	454	43.7	1787	40.4	2820	40.4
30 to < 35	299	28.4	137	29.0	254	24.5	794	17.9	1484	21.2
35 +	87	8.3	48	10.2	72	6.9	215	4.9	422	6.0
Parents' education at birth										
Mother										
Missing	224	21.3	45	9.5	39	3.8	185	4.2	493	7.1
Less than secondary	134	12.7	61	12.9	174	16.8	1029	23.3	1398	20.0
Secondary	263	25.0	138	29.2	350	33.7	1956	44.2	2707	38.7
Lower tertiary	317	30.1	181	38.3	387	37.3	1122	25.4	2007	28.7
Higher tertiary	114	10.8	47	10.0	88	8.5	132	3.0	381	5.5
Father										
Missing	228	21.7	47	10.0	54	5.2	158	3.6	487	7.0
Less than secondary	135	12.8	65	13.8	162	15.6	1068	24.1	1430	20.5
Secondary	313	29.8	159	33.7	418	40.3	2198	49.7	3088	44.2
Lower tertiary	238	22.6	128	27.1	286	27.6	783	17.7	1435	20.5
Higher tertiary	138	13.1	73	15.5	118	11.4	217	4.9	546	7.8

Table 1 continued

	No CFC		1-6m of CFC		7-12m CFC		13-24m CFC		Total	
	N	Per cent	N	Per cent	N	Per cent	N	Per cent	N	Per cent
Three-year average couple income previous to birth (2000 NOK)										
Mean	324,441		366,337		376,475		334,866		341,605	
25th percentile	55,000		170,000		213,000		210,000		192,000	
50th percentile	325,500		362,000		379,500		336,000		343,000	
75th percentile	510,500		528,500		507,000		444,000		465,000	
Three-year average relative income previous to birth										
No couple income	204	19.4	40	8.5	28	2.7	66	1.5	338	4.8
Mother contributes much more income	72	6.8	34	7.2	62	6.0	231	5.2	399	5.7
Mother contributes a little more income	125	11.9	66	14.0	133	12.8	479	10.8	803	11.5
Mother and father contribute equally	203	19.3	109	23.1	244	23.5	837	18.9	1393	19.9
Father contributes a little more income	331	31.5	156	33.1	403	38.8	1875	42.4	2765	39.6
Father contributes much more income	117	11.1	67	14.2	168	16.2	936	21.2	1288	18.4
Family leave take up										
No leave taken	398	37.8	160	33.9	272	26.2	1114	25.2	1944	27.8
Mother only	203	19.3	96	20.3	230	22.2	984	22.2	1513	21.7
Father takes some leave	451	42.9	216	45.8	536	51.6	2326	52.6	3529	50.5
Father takes "daddy days"	368	35.0	177	37.5	461	44.4	2138	48.3	3144	45.0
Father takes more than "daddy days"	83	7.9	39	8.3	75	7.2	188	4.2	385	5.5
Child care coverage in municipality (1 and 2 year olds)										
0-25%	232	22.1	60	12.7	85	8.2	735	16.6	1112	15.9
26-35%	191	18.2	117	24.8	323	31.1	1628	36.8	2259	32.3
36-45%	230	21.9	94	19.9	290	27.9	1089	24.6	1703	24.4
46-55%	250	23.8	158	33.5	265	25.5	757	17.1	1430	20.5
56+%	149	14.2	43	9.1	75	7.2	215	4.9	482	6.9
N	1052	100.0	472	100.0	1038	100.0	4424	100.0	6986	100.0
Per cent of total parents		15.1		6.8		14.9		63.3		100.0

Source: Norwegian Population Registers.

Table 2a Discrete time hazard models of take-up of 1 to 6 months Cash-for-Care benefit vs. no benefit conditioned on parental union status at end of birth year, parents of children born 1997–2000, Norway

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Relative Risk	Relative Risk	Relative Risk	Relative Risk	Relative Risk	Relative Risk
Demographic Characteristics						
Union Status at end of birth year						
Married prior to birth	1.00	1.00	1.00	1.00	1.00	1.00
Married after birth	0.71	0.71	0.80	0.79	0.80	0.81
Cohabiting	0.84	0.83	0.80	0.81	0.81	0.84
Non-residential/separated	0.50 ***	0.49 ***	0.68 *	0.69 *	0.70 *	0.68 *
Age of mother at birth		0.95	0.97	0.98	0.98	1.02
Age of mother at birth^2		1.00	1.00	1.00	1.00	1.00
Socioeconomic Characteristics						
Mother's Education						
Missing			0.58 *	0.69	0.66	0.65
Less than secondary			1.00	1.00	1.00	1.00
Secondary			1.06	1.11	1.13	1.13
Low Tertiary			1.06	1.11	1.13	1.10
High Tertiary			0.72	0.77	0.77	0.75
Father's Education						
Missing			0.68	0.76	0.75	0.73
Less than secondary			1.00	1.00	1.00	1.00
Secondary			0.96	0.99	0.99	0.99
Low Tertiary			0.98	1.01	1.01	1.01
High Tertiary			1.04	1.12	1.12	1.12
Combined couple income 3yr pre-birth avg				1.35 *	1.47	1.43 +
Combined couple income 3yr pre-birth avg^2				0.96 *	0.95	0.97
Three-year average relative income previous to birth						
No couple income					1.51	1.50
Mother contributes much more income					1.03	1.04
Mother contributes a little more income					0.98	1.03
Mother and father contribute equally					1.00	1.00
Father contributes a little more income					0.89	0.88
Father contributes much more income					1.19	0.96
Gender orientation						
Family leave taken						
Father takes some leave						1.00
Mother only						1.06
None taken						1.62 *
Regional context						
Childcare coverage in municipality, age 1-2						
0-25%						1.00
26-35%						1.24
36-45%						0.83
46-55%						1.29
56%+						0.58 *
N	6986	6986	6986	6986	6986	6986
R2	0.0136	0.0306	0.0715	0.0774	0.0796	0.1021
df	12	18	42	48	63	81
AIC	14354.5	14119.43	13572.52	13498.99	13497.3	13205.77
BIC	14436.72	14242.76	13860.29	13827.87	13928.96	13760.75

+p <0.1; *p <0.05; **p <0.01; ***p <0.001.

Source: Norwegian Population Registers.

Table 2b Discrete time hazard models of take-up of 7 to 12 months Cash-for-Care benefit vs. no benefit conditioned on parental union status at end of birth year, parents of children born 1997–2000, Norway

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Relative Risk	Relative Risk	Relative Risk	Relative Risk	Relative Risk	Relative Risk
Demographic Characteristics						
Union Status at end of birth year						
Married prior to birth	1.00	1.00	1.00	1.00	1.00	1.00
Married after birth	1.04	0.98	1.19	1.17	1.19	1.21
Cohabiting	1.18	1.10	1.00	1.00	1.02	1.03
Non-residential/separated	0.53 ***	0.48 ***	0.74 *	0.81	0.84	0.83
Age of mother at birth		1.03	1.13	1.07	1.12	1.14
Age of mother at birth^2		1.00	1.00	1.00	1.00	1.00
Socioeconomic Characteristics						
Mother's Education						
Missing			0.22 ***	0.34 ***	0.32 ***	0.35 ***
Less than secondary			1.00	1.00	1.00	1.00
Secondary			0.91	0.92	0.97	0.94
Low Tertiary			0.85	0.88	0.92	0.90
High Tertiary			0.61 *	0.64 +	0.68 +	0.66 +
Father's Education						
Missing			0.53 **	0.74	0.84	0.82
Less than secondary			1.00	1.00	1.00	1.00
Secondary			1.02	1.02	1.03	1.00
Low Tertiary			0.96	0.98	0.99	1.00
High Tertiary			0.78	0.81	0.79	0.81
Combined couple income 3yr pre-birth avg				1.56 ***	1.28	1.25
Combined couple income 3yr pre-birth avg^2				0.95 **	0.97	0.97
Three-year average relative income previous to birth						
No couple income					0.51	0.52
Mother contributes much more income					0.78	0.80
Mother contributes a little more income					0.87	0.91
Mother and father contribute equally					1.00	1.00
Father contributes a little more income					0.98	0.99
Father contributes much more income					1.29 +	1.32 +
Gender orientation						
Family leave taken						
Father takes some leave						1.00
Mother only						1.03
None taken						1.05
Regional context						
Childcare coverage in municipality, age 1-2						
0-25%						1.00
26-35%						1.70 **
36-45%						1.29
46-55%						1.16
56%+						0.52 **
N	6986	6986	6986	6986	6986	6986
R2	0.0136	0.0306	0.0715	0.0774	0.0796	0.1021
df	12	18	42	48	63	81
AIC	14354.5	14119.43	13572.52	13498.99	13497.3	13205.77
BIC	14436.72	14242.76	13860.29	13827.87	13928.96	13760.75

+p <0.1; *p <0.05; **p <0.01; ***p <0.001.

Source: Norwegian Population Registers.

Table 2c Discrete time hazard models of take-up of 13 to 24 months Cash-for-Care benefit vs. no benefit conditioned on parental union status at end of birth year, parents of children born 1997–2000, Norway

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Relative Risk	Relative Risk	Relative Risk	Relative Risk	Relative Risk	Relative Risk
Demographic Characteristics						
Union Status at end of birth year						
Married prior to birth	1.00	1.00	1.00	1.00	1.00	1.00
Married after birth	1.01	0.85	1.01	0.99	1.00	1.06
Cohabiting	1.29 **	1.02	0.79 *	0.80 *	0.81 *	0.80 *
Non-residential/separated	0.40 ***	0.25 ***	0.31 ***	0.34 ***	0.36 ***	0.35 ***
Age of mother at birth		0.82 **	1.06	1.02	1.08	1.06
Age of mother at birth^2		1.00	1.00	1.00	1.00	1.00
Socioeconomic Characteristics						
Mother's Education						
Missing			0.30 ***	0.53 ***	0.46 ***	0.48 ***
Less than secondary			1.00	1.00	1.00	1.00
Secondary			0.87	0.90	0.95	0.89
Low Tertiary			0.51 ***	0.54 ***	0.58 ***	0.55 ***
High Tertiary			0.24 ***	0.26 ***	0.29 ***	0.27 ***
Father's Education						
Missing			0.25 ***	0.41 ***	0.45 ***	0.44 ***
Less than secondary			1.00	1.00	1.00	1.00
Secondary			0.82 +	0.84	0.82 +	0.79 +
Low Tertiary			0.49 ***	0.50 ***	0.50 ***	0.54 ***
High Tertiary			0.33 ***	0.35 ***	0.33 ***	0.38 ***
Combined couple income 3yr pre-birth avg				2.26 ***	2.32 ***	2.38 ***
Combined couple income 3yr pre-birth avg^2				0.91 ***	0.91 ***	0.89 ***
Three-year average relative income previous to birth						
No couple income					1.20	0.86
Mother contributes much more income					0.87	0.84
Mother contributes a little more income					0.92	0.97
Mother and father contribute equally					1.00	1.00
Father contributes a little more income					1.22 +	1.26 *
Father contributes much more income					1.57 **	2.13 ***
Gender orientation						
Family leave taken						
Father takes some leave						1.00
Mother only						0.96
None taken						0.58 ***
Regional context						
Childcare coverage in municipality, age 1-2						
0-25%						1.00
26-35%						0.89
36-45%						0.53 ***
46-55%						0.39 ***
56%+						0.16 ***
N	6986	6986	6986	6986	6986	6986
R2	0.0136	0.0306	0.0715	0.0774	0.0796	0.1021
df	12	18	42	48	63	81
AIC	14354.5	14119.43	13572.52	13498.99	13497.3	13205.77
BIC	14436.72	14242.76	13860.29	13827.87	13928.96	13760.75

+p <0.1; *p <0.05; **p <0.01; ***p <0.001.

Source: Norwegian Population Registers.

Table 3 Characteristics of cohabiting parents of children aged 1 and 2, January first births, Norway 1997–2000

	Age 1		Age 2		Total	
	N	%	N	%	N	%
Union Status end of the subsequent year						
Marries	581	20.1	389	17.3	970	18.9
Continues to cohabit	1,944	67.4	1,590	70.7	3,534	68.9
Separates	359	12.4	269	12.0	628	12.2
Cash-for-care received in previous year						
None taken	325	11.3	670	29.8	995	19.4
Any taken	2,559	88.7	1,578	70.2	4,137	80.6
Year of birth						
1997	790	27.4	630	28.0	1,420	27.7
1998	726	25.2	587	26.1	1,313	25.6
1999	707	24.5	499	22.2	1,206	23.5
2000	661	22.9	532	23.7	1,193	23.2
Age of mother at birth						
< 20	96	3.3	63	2.8	159	3.1
20 to < 25	966	33.5	726	32.3	1,692	33.0
25 to < 30	1,194	41.4	938	41.7	2,132	41.5
30 to < 35	502	17.4	415	18.5	917	17.9
35 +	126	4.4	106	4.7	232	4.5
Subsequent birth (2nd + birth)	308	10.7	829	36.9	1,137	22.2
Parents' education @ birth						
Mother's Education						
Missing	28	1.0	17	0.8	45	0.9
Less than secondary	598	20.7	455	20.2	1,053	20.5
Secondary	1,380	47.9	1,094	48.7	2,474	48.2
Lower tertiary	772	26.8	597	26.6	1,369	26.7
Higher tertiary	106	3.7	85	3.8	191	3.7
Father's Education						
Missing	45	1.6	29	1.3	73	1.4
Less than secondary	1,053	36.5	470	20.9	1,088	21.2
Secondary	2,474	85.8	1,229	54.7	2,771	54.0
Lower tertiary	1369	47.5	395	17.6	917	17.9
Higher tertiary	191	6.6	125	5.6	283	5.5

Table 3 continued

	Age 1		Age 2		Total	
	N	%	N	%	N	%
Three-year average couple income previous to birth (2000 NOK)						
Mean	357,652		361,122		359,172	
25th percentile	242,000		246,000		244,000	
50th percentile	351,000		355,000		353,000	
75th percentile	453,000		455,000		455,000	
Couple income in previous year (2000 NOK)						
Mean	408,307		413,037		410,379	
25th percentile	301,000		304,000		301,000	
50th percentile	400,000		398,000		399,000	
75th percentile	483,000		493,500		487,000	
Relative income in previous year						
No (0) couple income	11	0.4	7	0.3	18	0.4
Mother contributes much more income	97	3.4	69	3.1	166	3.2
Mother contributes a little more income	158	5.5	112	5.0	270	5.3
Mother and father contribute equally	376	13.0	313	13.9	689	13.4
Father contributes a little more income	1,665	57.7	1,067	47.5	2,732	53.2
Father contributes much more income	577	20.0	680	30.2	1,257	24.5
Mother's return to the labor force						
Mother's income at least 75%+ of pre-birth 3-year aver	1,862	64.6	1,654	73.6	3,516	68.5
Family leave take up						
No leave taken	516	17.9	368	16.4	884	17.2
Mother only	650	22.5	503	22.4	1,153	22.5
Father takes some leave	1,718	59.6	1,377	61.3	3,095	60.3
Father takes "daddy days"	1,560	54.1	1,244	55.3	2,804	54.6
Father takes more than "daddy days"	158	5.5	133	5.9	291	5.7
Child care coverage in municipality (1 and 2 year olds)						
0-25%	358	12.4	277	12.3	635	12.4
26-35%	1,022	35.4	793	35.3	1,815	35.4
36-45%	727	25.2	569	25.3	1,296	25.3
46-55%	575	19.9	447	19.9	1,022	19.9
56+%	202	7.0	162	7.2	364	7.1
N	2,884	100.0	2,248	100.0	5,132	100.0

Source: Norwegian Population Registers.

Table 4 Discrete-time competing risk models of the risk of marriage (or separation) vs. continued cohabitation in t+1 conditioned on Cash-for-Care program receipt

Cohabiting parent of children aged 1 and 2, Norway 1997–2000

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	Relative Risk	Relative Risk	Relative Risk	Relative Risk	Relative Risk	Relative Risk	Relative Risk
Cash-for-care program participation by age of child							
No benefit taken when child age 13-24m	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CFC taken when child 13-24m	1.21 +	1.29 *	1.37 **	1.32 *	1.32 *	1.31 *	1.26 *
No benefit taken when child age 25-36m	1.41 *	1.42 *	1.40 *	1.39 *	1.39 *	1.35 +	1.36 +
CFC taken when child 25-36m	0.86 *	0.88 *	0.86 *	0.86 *	0.86 *	0.78 ***	0.77 ***
Demographic Characteristics							
Year of first birth	1.05	1.04	1.03	1.03	1.03	1.02	1.02
Age of mother at birth						1.29 +	1.30 *
Age of mother at birth^2						0.99 *	0.99 *
Subsequent birth (at least 2nd)						1.37 ***	1.38 ***
Socioeconomic Characteristics							
Mother's Education							
Missing		1.52	1.52	1.59	1.58	1.58	1.66
Less than secondary		1.00	1.00	1.00	1.00	1.00	1.00
Secondary		1.14	1.11	1.15	1.15	1.12	1.12
Low Tertiary		1.46 **	1.40 *	1.50 **	1.50 **	1.54 **	1.54 **
High Tertiary		0.89	0.81	0.91	0.91	1.03	1.04
Father's Education							
Missing		1.93	1.94	1.95	1.95	2.26 +	2.46 *
Less than secondary		1.00	1.00	1.00	1.00	1.00	1.00
Secondary		1.33 *	1.31 *	1.29 *	1.29 *	1.24 +	1.25 +
Low Tertiary		1.41 *	1.32 +	1.28	1.28	1.30 +	1.35 +
High Tertiary		1.34	1.24	1.16	1.16	1.22	1.27
Combined couple income in previous year			0.65 *	0.44 **	0.45 **	0.41 **	0.41 ***
Combined couple income in previous year^2			1.07 **	1.12 ***	1.12 ***	1.12 ***	1.13 ***
Combined couple income 3yr pre-birth avg			1.65	1.93	1.91	1.52	1.60
Combined couple income 3yr pre-birth avg^2			0.94	0.93	0.93	0.96	0.96

Table 4 continued

	Model 1 Relative Risk	Model 2 Relative Risk	Model 3 Relative Risk	Model 4 Relative Risk	Model 5 Relative Risk	Model 6 Relative Risk	Model 7 Relative Risk
Relative income in previous year							
No (0) couple income				0.15	0.15	0.12	0.11 +
Mother contributes much more income				1.14	1.13	1.16	1.00
Mother contributes a little more income				0.87	0.87	0.89	1.21
Mother and father contribute equally				1.00	1.00	1.00	0.90
Father contributes a little more income				1.13	1.14	1.08	1.07
Father contributes much more income				1.44 **	1.47 *	1.37 +	1.30
Mother's return to the labor force							
Mother's income <75% of pre-birth 3 yr avg					1.00	1.00	1.00
Mother's income 75%+ of pre-birth 3 yr avg					1.03	0.98	0.96
Gender orientation							
Family leave taken							
Father takes some leave							1.00
Mother only							1.01
None taken							1.23
Regional context							
Childcare coverage in municipality, age 1-2							
0-25%							1.00
26-35%							1.11
36-45%							0.96
46-55%							0.78
56%+							0.83
N	5132	5132	5132	5132	5132	5132	5132
Couples	2884	2884	2884	2884	2884	2884	2884
R^2	0.0031	0.0288	0.0477	0.0498	0.0498	0.0684	0.0742
df	10	26	34	44	46	52	64
AIC	8500.972	8314.531	8169.668	8171.744	8175.232	8029.653	8004.03
BIC	8566.405	8484.655	8392.139	8459.647	8476.222	8369.902	8422.798

+*p* <0.1; **p* <0.05; ***p* <0.01; ****p* <0.001.

Source: Norwegian Population Registers.

Note: Results on separation verus continued cohabitation reported in Appendix Table A1.

8. APPENDIX

Table A1 Discrete-time competing risk models of the risk of separation (or marriage) vs. continued cohabitation in t+1 conditioned on Cash-for-Care program receipt
Cohabiting parent of children aged 1 and 2, Norway 1997–2000

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	Relative Risk	Relative Risk	Relative Risk	Relative Risk	Relative Risk	Relative Risk	Relative Risk
Cash-for-care program participation by age of child							
No benefit taken when child age 13-24m	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CFC taken when child 13-24m	0.84	0.68 ***	0.60 ***	0.60 ***	0.60 ***	0.56 ***	0.59 ***
No benefit taken when child age 25-36m	1.39 +	1.39 +	1.32	1.32	1.32	1.29	1.27
CFC taken when child 25-36m	0.93	0.90	0.95	0.95	0.95	1.21 *	1.22 *
Demographic Characteristics							
Year of first birth	1.04	1.07	1.11	1.11	1.11	1.09	1.09
Age of mother at birth						0.66 ***	0.66 ***
Age of mother at birth^2						1.01 ***	1.01 **
Subsequent birth (at least 2nd)						0.34 ***	0.34 ***
Socioeconomic Characteristics							
Mother's Education							
Missing		0.71	0.96	0.98	0.97	1.41	1.31
Less than secondary		1.00	1.00	1.00	1.00	1.00	1.00
Secondary		0.51 ***	0.65 ***	0.65 ***	0.65 ***	0.73 *	0.72 *
Low Tertiary		0.40 ***	0.54 ***	0.53 ***	0.53 ***	0.73	0.71 +
High Tertiary		0.42 *	0.68	0.66	0.65	0.94	0.86
Father's Education							
Missing		3.53 ***	2.78 **	2.79 **	2.77 **	3.78 ***	3.40 ***
Less than secondary		1.00	1.00	1.00	1.00	1.00	1.00
Secondary		0.67 **	0.81	0.82	0.82	0.85	0.86
Low Tertiary		0.56 **	0.64 *	0.64 *	0.64 *	0.74	0.70 +
High Tertiary		0.22 ***	0.36 *	0.36 *	0.36 *	0.39 *	0.39 *
Combined couple income in previous year			1.24	1.19	1.17	1.10	1.09
Combined couple income in previous year^2			0.94 *	0.94	0.95	0.96	0.96
Combined couple income 3yr pre-birth avg			1.97 *	2.01 *	2.03 *	1.60	1.41
Combined couple income 3yr pre-birth avg^2			0.89 ***	0.89 ***	0.89 ***	0.93 +	0.95

Table A1 continued

	Model 1 Relative Risk	Model 2 Relative Risk	Model 3 Relative Risk	Model 4 Relative Risk	Model 5 Relative Risk	Model 6 Relative Risk	Model 7 Relative Risk
Relative income in previous year							
No (0) couple income				0.79	0.76	0.62	0.61
Mother contributes much more income				0.99	1.00	1.00	0.95
Mother contributes a little more income				0.99	0.99	1.07	1.00
Mother and father contribute equally				1.00	1.00	1.05	1.00
Father contributes a little more income				0.92	0.92	0.84	0.85
Father contributes much more income				0.96	0.91	0.79	0.84
Mother's return to the labor force							
Mother's income <75% of pre-birth 3 yr avg					1.00	1.00	1.00
Mother's income 75%+ of pre-birth 3 yr avg					0.92	0.77 +	0.81
Gender orientation							
Family leave taken							
Father takes some leave							1.00
Mother only							1.41 *
None taken							1.03
Regional context							
Childcare coverage in municipality, age 1-2							
0-25%							1.00
26-35%							1.12
36-45%							1.20
46-55%							1.85 **
56%+							1.41
N	5132	5132	5132	5132	5132	5132	5132
Couples	2884	2884	2884	2884	2884	2884	2884
R^2	0.0031	0.0288	0.0477	0.0498	0.0498	0.0684	0.0742
df	10	26	34	44	46	52	64
AIC	8500.972	8314.531	8169.668	8171.744	8175.232	8029.653	8004.03
BIC	8566.405	8484.655	8392.139	8459.647	8476.222	8369.902	8422.798

+*p* <0.1; **p* <0.05; ***p* <0.01; ****p* <0.001.

Source: Norwegian Population Registers.

Note: Results on marriage verus continued cohabitation reported in Table 5.

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