Timing of second birth and use of childcare cash benefits in Norway

Arnstein Aassve
Bocconi University, IT
arnstein.aassve@unibocconi.it

Trude Lappegård
Statistics Norway, NO
trude.lappegard@ssb.no

INTRODUCTION

Norway is well recognized for both generous parental leave and extensive supply of external child care facilities. It has been argued that these factors have contributed both to high levels of female labour force participation and high fertility rates (e.g. Daly, 2000; Esping-Andersen, 2002; Stier et al. 2001). The argument is simple: parental leave and ample availability of child care make it easier to combine childbearing with working careers. However, in 1998 a new childcare cash benefit was introduced by the conservative coalition government (for a review of the policy see Ellingsæter, 2003; 2007). A key issue of the policy is that it gives the mother (and fathers) the opportunity to receive a cash benefit if they decide to care for the child themselves - instead of utilizing external childcare. The aim of the reform was threefold: (i) to give families more flexibility with respect to own childcare, (ii) to provide a cash-benefit to parents with preference for caring for their children at home, and (iii) to compensate those who were not offered external childcare provision. The policy was strongly opposed by the opposition on the left and created considerable political debate. A key argument in this debate is that the cash benefit is gender biased, encouraging women to stay at home, and thereby reducing female labour supply. There is indeed evidence to suggest that the policy did reduce labour force participation among women. However, much less is known about the possible effect on fertility behaviour. In this paper we consider exactly this question. Previous work has suggested a positive relationship between take-up of the benefit and increased fertility (Aassve and Lappegaard 2008), but there is substantial heterogeneity in the take-up of the benefit, and couples have different reasons for doing so. In general couples with children aged between 13-36 months are eligible for the benefit as long as the child does not attend state provided external childcare. Parents have the option to receive cash-benefit for as many months they like within this period. However, more than half of the recipients take the benefit for a shorter period than the 24 months available.

An important aspect of the benefit concerns availability of parental leave. Working mothers have long been entitled to a fully paid parental leave lasting almost one year after child birth. However, eligibility of the parental leave requires that the mother work prior to childbirth, which means that most one-child mothers return to work before having the second child. The introduction of the benefit has as a result opened for alternative parental leave strategies. For working mothers, the cash benefit could function as an extension of the paid leave period and result in a longer break from the labour market after having a baby. In this sense the policy has created more flexibility for work and child care decisions. The reasons

behind the strategies adopted are of course complex and will be function of parents' preference for child care mode, working careers, and actual availability of external child care.

The focus of this paper is on how take-up of the new cash benefit is related to fertility outcomes. Has greater flexibility in childcare changed fertility behaviour in any way? This is a highly interesting question, given that the alleged flexibility here implies a return to more biased gender roles – primarily reflected by reduced labour supply among women and a higher number of women caring for their children at home. There are good reasons to believe that those taking the cash benefit also change their fertility behaviour (Aassve and Lappegård, 2008). There is, however, a wide variety in mother's uptake, indicating diversity in couples' motivation for receiving the benefit and their work and childcare adjustments, which could affect fertility timing differently.

There is limited evidence on how policies may affect fertility behaviour (for a review of the literature see Gauthier, 2007; Neyer, 2003). One exception is the Swedish "speed-premium" that resulted in a clear change in childbearing behaviour (Andersson, Hoem & Duvander, 2006). The "speed-premium" is a component of the Swedish parental leave programme that give parents an opportunity for making a shorter spacing of children without reducing the parental benefits. There is clear evidence that childbearing outcomes were accelerated after the "speed-premium" was introduced, indicating that parents are responsive to policies that give families more flexibility with respect to work and childcare alternatives and consequently childbearing spacing.

We use Norwegian register data on childbearing outcomes and detailed information on cash benefit take up to assess differences in the timing of having the second birth. We find that those taking the benefit tend to accelerate the timing of second child birth, but the relationship is not linear. The behaviour differs substantially depending on the education level of the mother.

THE CHILDCARE CASH BENEFIT POLICY

With the new child care cash benefit system introduced in 1998-1999, subsidized childcare was maintained. The key difference is that families with children aged 13-36 months were given the alternative option of receiving a tax-free cash transfer that only depends on utilization of state provided childcare, see Table 1. Care exceeding 32 hours per week at day-care centres makes the family non-eligible to the cash-benefit. The combination of part-time kindergarten and reduced cash-benefit is used by about 18 per cent of the children parents are

receiving the cash-benefit for. The maximum transfer is approximately EURO 450 per month, which is roughly equivalent to the state subsidy per child given to day-care centres.

Table 1: The rate system for the childcare cash-benefit.

	Weekly hours of care of day-care centres					
	0	1-8	9-16	17-24	25-32	32+
Yearly	4,500	3,600	2,700	1,800	900	0
rate	(100%)	(80%)	(60%)	(40%)	(20%)	(0%)

Yearly rates in EURO in 2000

Table 2: Distribution of childcare mode, numbers in percentages for the year 2002.

Childcare mode	Children aged 1-2 year, all	Children aged 1-2 year, cash-benefit
Parents	44	56
Other relatives	4	5
Au pair, Babysitter	12	16
Kindergarten	33	14
Combinations or other solutions	7	10

Source: Pettersen (2003)

Many parents have received the cash-benefit after the reform was introduced, e.g. 72 percent in 2003. Later this proportion has declined, possibly driven by increased day-care supply. At the end of 2002 the coverage rate at day-care centres among 1-2 year olds were 41 per cent, which rose to 62 per cent at the end of 2006. Table 2 shows the distribution of childcare modes in Norway of the year 2002. Here the second column gives the percentages for *all* parents with children aged between 1 and 2 years. The third column shows the distribution for childcare mode for those receiving the cash-benefit for at least one month during the year. Naturally, caring for their own children is more common in this group whereas the number of parents sending their children to kindergarten are considerably lower (i.e. only 14 percent). It is important to bear in mind that *not* taking state-subsidized childcare is the only eligibility constraint. For instance, parents may work full time and still receive the benefit, in which case - presumably - the cash-benefit is spent on informal childcare such as au pair or babysitters. Alternatively, the parent may keep the benefit and reduce their labour supply, possibly leaving the labour force, and care for the child themselves.

There is a financial side to the policy that may influence parent's preferences for work and childcare alternatives. The expenses for formal day-care (i.e. day-care centers) are shared between the state, the municipality and the parents. In 1998 the average price was around 440 EURO. After introducing the cash-benefit the cost for a full-time place at a day-care center

does not only include the fee parents pay, but also the additional cost of loosing out on the cash transfer (Kornstad & Thoresen, 2007). For mothers that would have stayed at home in any case, obviously the cash-benefit provides an increase in disposable income, but in the sense the policy has an income effect for working mothers, the size of the effects depends on her income level. The income effect will be stronger for mothers with low earnings, since for them the cash-benefit will be perceived as relatively large (at least compared to mothers with higher earnings). These effects can be explained in light of mother's perceived opportunity cost of children, which consists of two parts. One is the mother's direct wage loss during labour force withdrawal. The other is her loss of human capital investment and returns to these investments. Earnings matter of course as this will determine the perceived reduction in the cost of children following the cash-benefit. Since it is a fixed amount per child, mothers with low earnings (and therefore lower opportunity costs) may find the cash-benefit more attractive. They are consequently more likely to withdraw from the labour market and care for their children at home.

CHILDCARE CASH BENEFIT USE AND TIMING OF SECOND BIRTH

Generally, a positive correlation between use of childcare cash benefit and fertility timing has been found (Aassve & Lappegård, 2008). This can be explained from the economic benefit of the cash benefit where, assuming children are a normal good, the cash-benefit provides an increase in disposable income which reduces the cost of children and thereby increases fertility.

   It is important to bear in mind that the only requirement for receiving the benefit is that the child does not attend state provided external childcare. This means that take-up of the benefit is not necessarily equivalent with mothers staying at home, and whether the cash-benefit policy leads to a change in female labour supply depends of her preferences over work and childcare alternatives. One may distinguish between preferences for *parental care*, *informal care* and *formal care*. Consequently, motivation for receiving the cash-benefit may affect fertility timing. Parents with preferences for *parental care* are likely to differ in their family orientation, possibly adopting a more traditional male breadwinner model of family life. Whereas the cash-benefit was supposed to be gender-neutral, all evidence suggests that it was not. Mothers are the main receivers of the cash-benefit (96 percent) and earlier evaluations of the reform show that there have been some adjustments in childcare and labour supply, mainly by the mother. Several studies have reported a negative effect of the benefit on

mothers' labour supply since the reform was introduced (Håkonsen, Kornstad, Løyland, & Thoresen, 2001; Knudsen, 2001; Rønsen, 2001, 2005; Schøne, 2004). If the parents have preferences for *formal childcare* the issue of capacity constraints of external childcare facilities is undoubtedly an important driver behind their take-up of the cash-benefit. For these mothers it is likely that the cash-benefit is used to pay informal childcare rather than to finance own care. Parents with preferences for *informal childcare* over formal childcare are not a large group (around 10 per cent of parents of children aged 1-2 used informal childcare, i.e. au pair, child minders) and surveys have shown that the majority of those using informal childcare would have chosen formal childcare if available (Pettersen, 2003). Some cash-benefit recipients might have preferred kindergarten if available, but instead 'forced' to take the benefit whilst awaiting an available space. Mothers without external childcare temporarily but with strong work preferences will most likely use the benefit to cover informal childcare while still working.

Length of cash-benefit use and diversity in the economic beneficiary of the policy may result in significantly differences in the correlation between use of the cash-benefit and timing of second birth. First, there is much variation in length of parents cash-benefit use (see Table 3), which can be linked to their motivation for receiving the benefit. Most parents do not have an available kindergarten space for their child from the day she is one year old and the parental leave period is expired. Generally there is one main admission yearly (normally with start from August 1.), but there is also admissions during the year, although with less available spaces. This means that many parents with preferences for formal childcare receive the cash-benefit in a shorter period while they're waiting for available space. Parents with preference for parental care may be distinguished due to their length of cash-benefit use. First, working mothers are entitled to one year of unpaid parental leave, in extension to one year of paid leave. After this leave period they can apply for additional leave, but without the right to return to their original job position. This means that some mothers may prefer parental care, but for a shorter period, and return to work after one year of unpaid leave in order to maintain their original job position. Also, eligibility to paid parental leave requires that women works more than half time (i.e. 50 percent) for six out of the last 10 months, which means that it would be important for them to return to the labour market before having the next child, and thereby maintaining their foothold in the labour market. For this group of women we could expect that cash-benefit use for a limited period of time increases the spacing between first and second birth. Second, contrary to this line of thought one could also imagine scenarios where the economic benefits of the cash-benefit reduced child spacing also for working

mothers. That is, some mothers might take advantage of the cash-benefit to have *two* children within an extended break from the labour force.

There is also a financial side to the policy that can influence parent's preferences for work and childcare alternatives. The diversity in the economic beneficiary of the policy may also influence the correlation between use of cash-benefit and timing of second birth. Generally, educational attainment has an important role on child spacing (with or without the childcare cash benefit), and it is critically important to bear in mind that mothers with high education significantly postpones the *onset* of childbearing – simply because they spend longer time in education. This is of course the case in most developed countries. Consequently, there will be important recuperation effects, which are manifested through quicker progression to second births among those with high education. With the cash-benefit one would expect that the extra income associated with it will be more attractive for those with low education, and for that reason be more likely to take the cash-benefit, and since the benefit is more substantial – relatively speaking – for those with low education, we should observe a larger effect among these mothers. The effect should be smaller for those with higher education.

Mothers that belong to different educational groups do however differ in their length of cash-benefit use (see Table 3), e.g. mothers with low education has highest proportion of taking the full length of cash-benefit use, and mothers with high education has highest proportion of those taking cash-benefit for a shorter period. It is possible to consider different responses of the length of the cash-benefit use among mothers with different educational attainment. As discussed above some working mothers may prefer parental care for a shorter period and then return to work before having a second child, while others that prefer parental care take advantage of the whole cash-benefit period to have two children within a larger break from the labour market. For mothers outside the labour market, most likely with preferences for parental care, the cash-benefit operate as an alternative income source, which could be continuously available for four years if she has her second child within two years. Among mothers with low education we can expect a strong effect of full length of the cash-benefit use, especially in the short time interval, but also for the other time-intervals. The argument for this is first and foremost that the economic beneficiary of receiving the cash-benefit as an alternative income source is highest among those with low education. This means that such group has most to gain of having a second child within a short time-interval. Among mothers with higher education we can expect a more diverse pattern due to length of cash-benefit use. In line with the previous argument we could also expect a higher effect of full length of the cash-benefit use for the short time-interval. The economic beneficiary of

short spacing may be lower in this group, but among those (somewhat rare group) with preferences for long-term parental care in combination with taking a longer break from the labour market, it will also function as an alternative income source. Although, the attractiveness of taking a longer break from the labour market for this reason is also related to the husband's income level. That is, the higher the income of the husband, the easier it will be for a woman with high education – with preference for parental care – to take a longer break from the labour market. For those mothers receiving the cash-benefit for a shorter period we could expect low fertility in the shortest time-interval, especially if these mother have chosen a strategy of parental care for a shorter period in extension of the parental leave period and are returning to work before having a second birth. In higher time-intervals we could expect to see less difference between those taking some cash-benefit and those receiving cash-benefit in its full length.

DATA

The data are derived from Norwegian population registers and cover the period 1998-2005. The dataset comprise demographic information on all co-residing couples with one or two common children who ever lived in Norway during this period. The dataset only include couples where their first common child is also the first child of the mother. The demographic data is merged with information on registered earned income stemming from Norwegian tax registers. Information on educational attainment is added from Norwegian education registers and information on parental leave and the cash-benefit uptake are made available from Norwegian Labour and Welfare Organisation (NAV).

In order to follow the couples both during the cash-benefit period and until the child is 5 years old we restricted our dataset to one-child couples with children born in 1998, 1999 and 2000, which thereby comprise 56,670 one-child couples. As previously mentioned, take-up of the cash-benefit is voluntary, and eligibility depends on whether the parents have access to kindergarten for their child. Moreover, the maximum time period parents can receive the cash-benefit is 24 months (i.e. when the child is aged between 13 and 36 months). They can however, take the cash-benefit for a shorter time period. If for instance formal childcare (i.e. kindergartens) was not immediately available the parents may opt for the cash-benefit in the meantime.

The models include five demographic variables, age of mother at first birth, age difference between parents, country of origin, calendar year of first birth, and marital status. Further we have included couples earned income and the gender balance in breadwinning

through a variable of the proportion of mothers earned income on fathers earned income. We include educational attainment of father and mother year before first birth. In addition we also include father's use of parental and children 1-2 year in kindergarten in municipalities.

Table 3 Up-take of cash-benefit for children born 1998-2000, all and by mother's educational attainment, Percent

| | All | Educational attainment | | | |
		Low	Medium	High	Very High
C1 (0 months)	12	6	7	13	27
C2 (1-6 months)	10	5	8	14	24
C3 (7-12 months)	10	8	9	13	14
C4 (13-18 months)	9	10	9	10	9
C5 (19-23 months)	12	15	12	11	9
C6 (24 months)	47	56	55	39	17

METHOD

The key idea in this paper is to assess how differences in cash benefit take up relates to timing of second births. That is, we are interesting in finding out to what extent someone taking the cash benefits for the full 24 months differs in birth timing from someone who does not take the full cash benefit. There are several estimation strategies available. Here we implement an inverse probability weighting estimator, whereby the weights are derived from propensity score estimation. The estimation proceeds consequently in two stages. In the first stage consist of estimating the propensity score for taking treatment. Given the propensity scores, we use them as weights when computing the mean time of having the second child. Differently from the vast majority of empirical work based on propensity score estimation, we are dealing here with multi-valued treatment variable. That is, the cash benefit is available for up to 24 months, but in practice they might choose to only use one month. In general, couples will differ in the extent they take up the cash benefit. In previous work we have dealt with this issue by simply dividing the sample into two groups: 1) those who take less than 12 months and 2) those who take more then 12 months. The former are considered as not taking the benefit, whereas the latter are considered as taking it. Thus, the propensity score estimation can be done easily by implementing a logit or probit specification.

Here we divide instead couples into six groups: 1) Those who never take the cash benefit, 2) those taking it for 1 – 6 months, 3) 7 – 12 months, 4) 13 to 18 months, 5) 19 to 23 months, and 6) those who take the full 24 months of cash benefit. The advantage of this approach is that we are able to distinguish whether the different take up is associated with different timing of childbearing – here being the second birth. The frequencies for these

groups are shown in Table 3. Unlike the simple propensity score matching approach, where treatment is defined over a dichotomous variable, we need to estimate the propensity of belonging to each of the six groups. This is done easily by a multinomial logit specification[1]. Moreover, when treatment is dichotomous, estimation of difference in the outcome variable (here the timing of the second birth measured since time when the couple had the first child) is normally done with the help of a non-parametric matching technique. Such an approach is made more complicated here since we have in total six treatment groups.

A simple solution to this problem, however, is to use the inverse probability weighting estimator. That is the mean value of the outcomes for the six groups are calculated by using the inverse of the propensity scores as weight. Cattaneo (2007) discusses consistency and efficiency for a broad class of Inverse Probability Weighting estimators where the weight is based on the propensity score. The weight is consequently derived from the estimation of the multinomial logit specification which consists of a very detailed set of covariates. In other words, the approach controls for background information, though we do not impose any parametric assumptions, which would be the case if estimating a discrete time hazard regressions directly.

The outcome variable is defined in a similar way as in Aassve and Lappegård (2008). First, the sample includes couples who were recorded to have the first birth. The outcome variable is then defined by the time until they have the second birth, where these are measured yearly. Thus, the outcome is in effect a discrete time hazard regression as estimated mean gives the rate of having the next child for each of the consequent year intervals.

RESULTS AND DISCUSSION

We start by reporting the estimated rates of having the second birth for the overall sample. They are shown in Figure 1[2]. It is immediately clear that those who take the full 24 months of cash benefit proceeds quicker to have the second birth. The birth hazard is higher than the other groups in all four time periods. Interestingly, there is little evidence to suggest that those in the fifth groups, i.e. those taking the cash benefit from 19 to 23 months, have a rate that is higher then the other groups. However, the third group, i.e. those taking the cash benefit from 7-12 months, have a rapid change in second birth rates from the first to the second interval; the second birth rate is very low in the first interval (12-23 months after first birth), but increases to a relatively high level in the second interval (24-35 months after first birth). This

---

[1] The results from the multinomial logit specification are not reported, but available from the authors on request.
[2] Numbers for Figure 1 is presented in Appendix 1.

may be seen in relation to an alternative strategy where some women receive the cash-benefit while they take an additional (unpaid) parental leave after the paid parental leave period of one year. For this group the second birth rate is very low while they receiving the cash-benefit, probably because they return to the labour market in order to build up eligibility for parental leave benefits before having a second birth (which requires work for six out of ten weeks before the leave period).

Figure 1. Second birth rates by use of childcare cash benefit. All
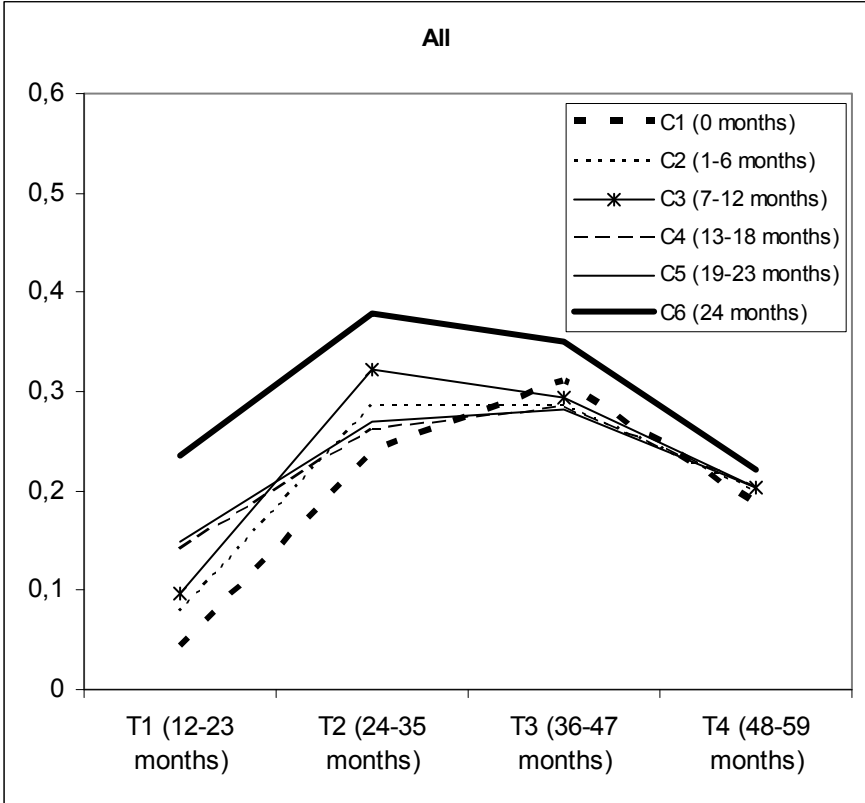
In figures 2 to 5[3] we show the estimated birth hazard for different educational groups. We have divided between four groups; low (primary education), medium (secondary education), high (University 1st stage), and very high (University 2nd stage). Looking across the four figures we observe that those with higher education in general have a higher rate of second birth. This is consistent with a large body of research. The key mechanism here is that those with higher education generally delay the onset of childbearing. Once they have the first child they are much quicker in having the second birth.

---

[3] Numbers of Figures 2-5 is presented in Appendix 2-5.

Figure 2 shows that among those with low education, those taking the full amount of cash-benefit, have a higher likelihood of having the second birth. For this group there is not an increase between first and second interval among those receiving the benefit for 7-12 months, suggesting that the strategy of taking an extended leave, but return to the labour market before having a second child is not very common among women in this group.

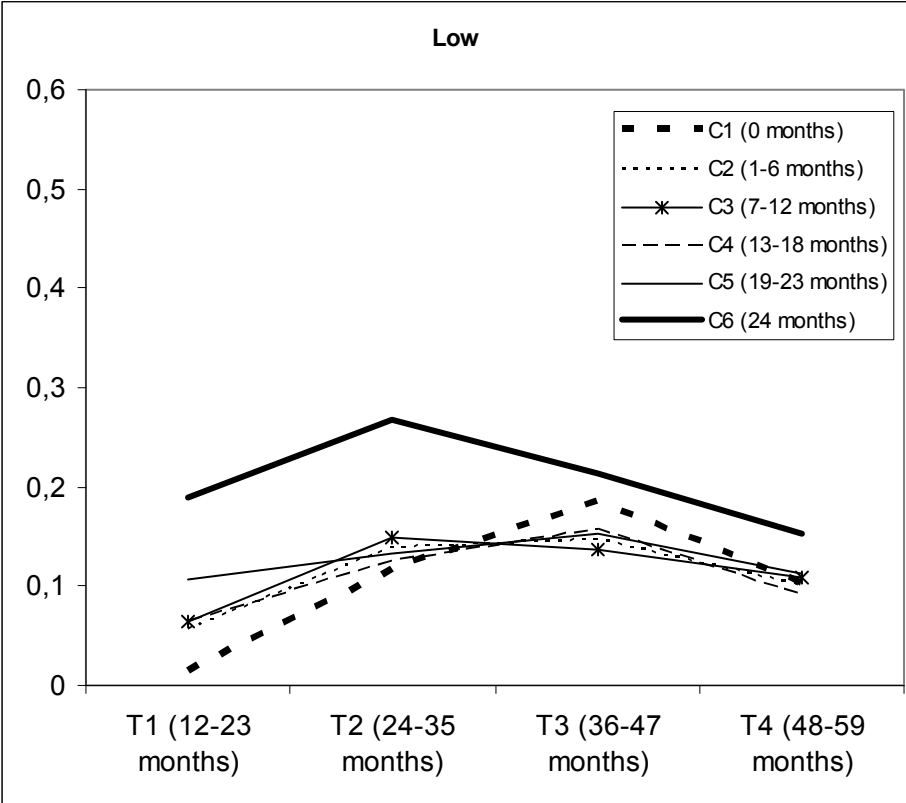**Figure 2. Second birth rates by use of childcare cash benefit. Low education**

Figure 3 shows a similar picture for those with medium level of education, though in this case there is no significant difference between the six treatment groups in the last time interval (i.e. from 36 months onwards), but here we see the pattern of a rapid increase between the two first intervals.

Figure 3. Second birth rates by use of childcare cash benefit. Medium education
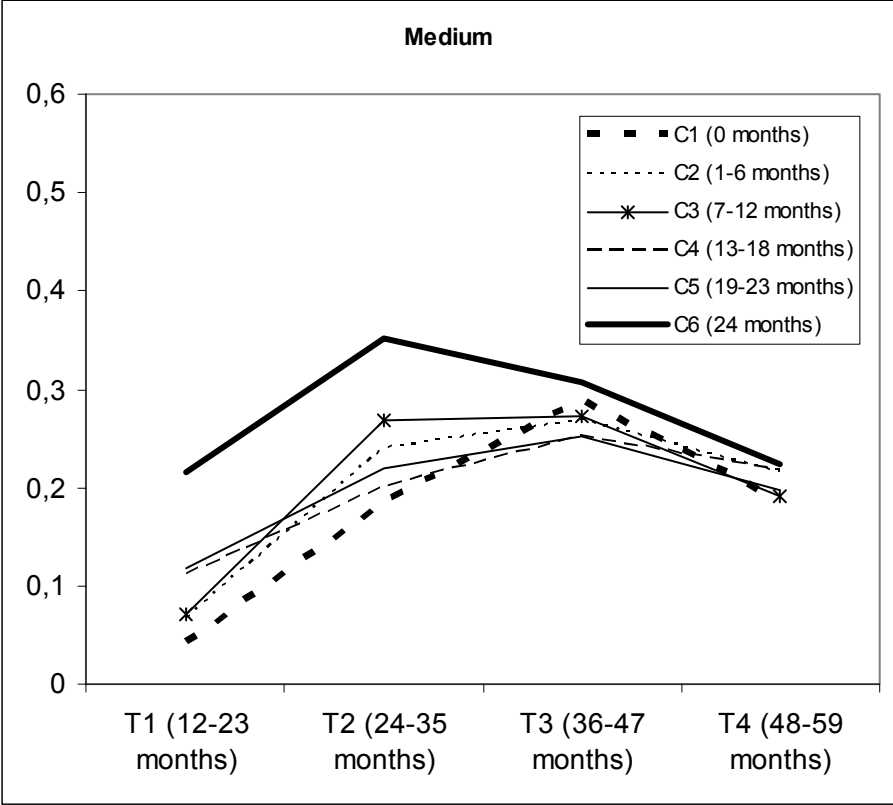

Figure 4, which shows the rates of having the second birth for those with high level of education, indicates that again, in the last time interval there is no difference between the treatment groups. There is however a difference in the second interval, where those taking the full 24 months of cash-benefit and those taking between 7 to 12 months have a higher birth rate than the other groups. For those taking the cash-benefit between 7 and 12 months we also see the rapid increase between the two first intervals.

Finally, Figure 5 shows the birth hazards for those with very highest educational levels. As already pointed out, the birth hazards are here much higher than those with lower education – independent of which treatment group we are considering. There are several interesting issues here. First, it is important to bear in mind that few individuals with high education go on to take the full 24 months of cash-benefit. This is what one would expect. We know from the propensity score estimation stage that those with higher education are considerably less likely to take up the cash benefit (see also Table 3). Nevertheless, some women do take the full 24 months, despite having full University education. One interpretation for why these women take the full cash benefit is that they have a strong

preference for caring for their children themselves (as opposed to using external child care). In the same way as among women with high educational level, we also here see a rapid increase between the two first intervals, indicating a strategy of parental care for å shorter period and then returning to working before having a second child, as opposite of having two children within a larger break from the labour market.

Figure 4. Second birth rates by use of childcare cash benefit. High education
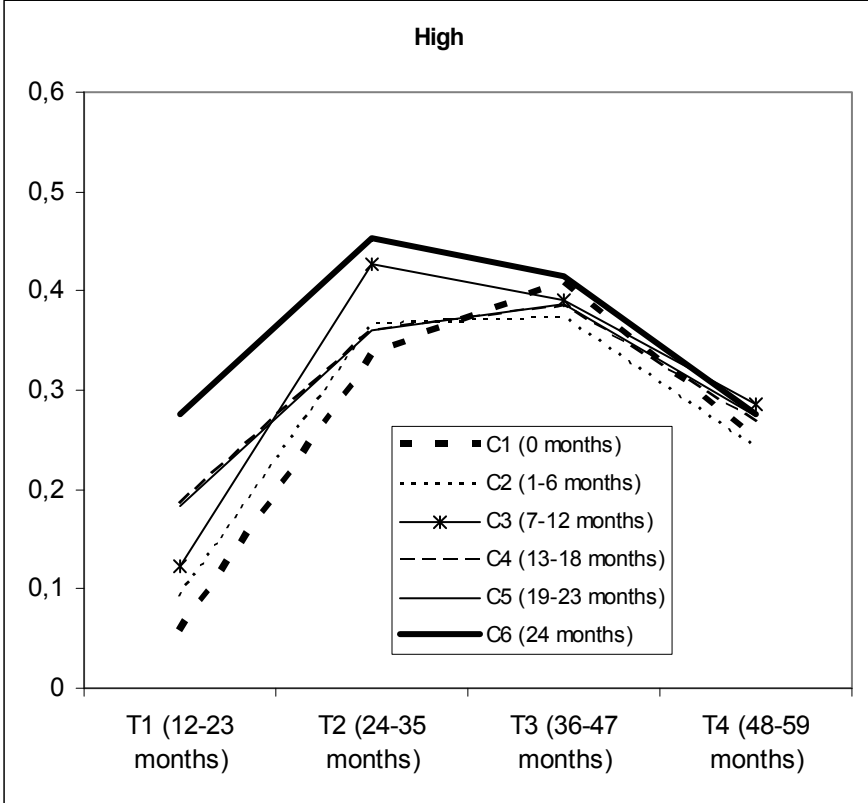
Figure 5. Second birth rates by use of childcare cash benefit. Very high education
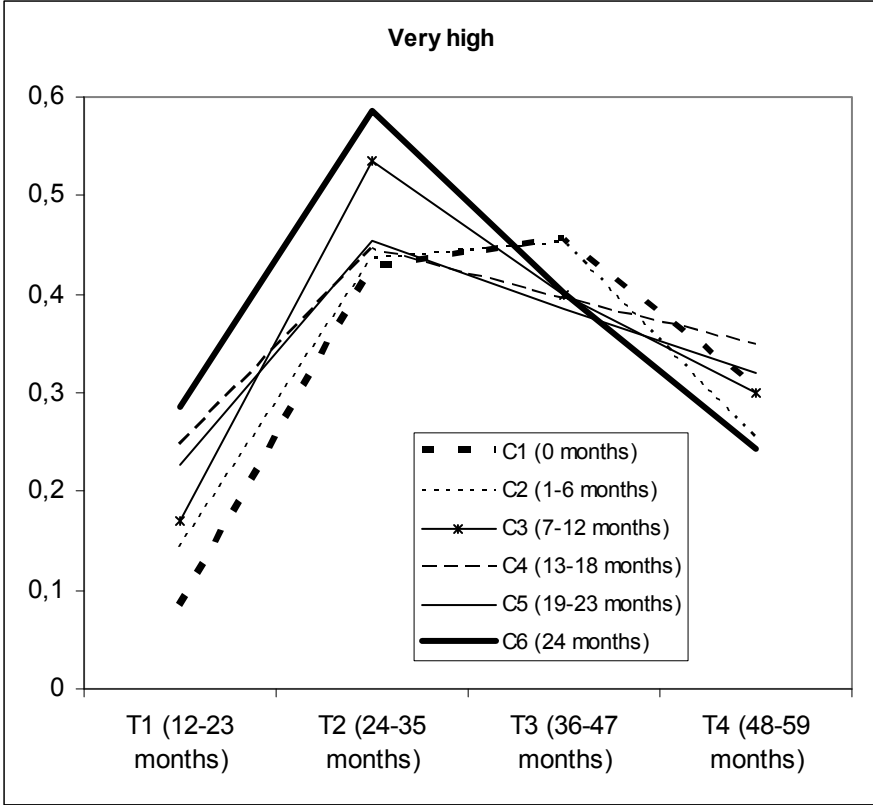
CONCLUDING REMARKS

The analysis gives insight into how take-up of the childcare cash-benefit is related to fertility outcomes. As we have seen there are significant differences in how different groups have responded to the policy and its consequences on timing second birth. The overall picture is that those receiving the full cash-benefit for 24 months proceed to the second birth more quickly, but they also have generally higher second birth intensity in all the intervals, which can be related to a generally stronger family-orientation. There are significant variations in take-up of the cash-benefit among different groups and it is clear that there are different strategies behind their take-up. The policy is first and foremost used by mother with low and medium education and adopted into their preferences for work and childcare. Also mothers with higher education do however uses the policy, but they seems to make use of it for a shorter period, either as they are awaiting for available formal childcare or they have chosen a strategy of taking a longer break from the labour market after birth, but then return to the labour market before having a second child. The analysis indicates that the latter is a very likely scenario, where those receiving the cash-benefit for 7-12 months have a peak of second birth in the second interval.

One of the main goals of childcare cash-benefit was to give parents better flexibility with respect to own childcare. It is difficult to answer whether this greater flexibility have changed fertility behaviour in any way. Couples choose different strategies concerning work, childcare and childbearing. It is clear that among couples where the mother have low education the cash-benefit produce a sharper contrast in fertility timing than among the other groups. This may be seen as an outcome of higher educated women generally delay the onset of childbearing, and thereby proceed quicker to having the next child anyhow. For women with low education, receiving the cash-benefit gives an alternative income source, which could be continuously available for four years if she has her second child within two years. Among couples where the mother has higher education and they have received the cash-benefit for a shorter period there seems to be a delay of second births until they do not receive the benefit anymore. Possible because they have returned to work and worked up eligibility for a new paid parental leave, and then increases their second births. However, it is important to underline that our analysis do not show any causal effects the cash-benefits on timing of second birth, but it is clear that couples have responded to the policy in manifold ways, both in terms of childcare alternatives and in terms of fertility timing.

References

Aassve, A. and Lappegård, T. (2008). Childcare Cash Benefits and Fertility Timing in Norway, *European Journal of Population*, (online first) DOI 10.1007/s10680-088-9158-6.

Andersson, G., Hoem, J. and Duvander, A.-Z. (2006). Social differentials in speed-premium effects in childbearing in Sweden, *Demographic Research*, 14:51-70.

Cattaneo, M.D. (2007). Efficient Semiparametric Estimation of Multi-valued Treatment Effects, Job Market Paper, UC-Berkely.

Daly, M. (2000). A fine balance: Women's labour market participation in International comparison. In F. W. Scharpf & V. A. Schmidt (Eds.), *Welfare and work in open economy, Vol.2: Diverse responses to common challenges*. Oxford: University Press.

Ellingsæter, A.L. (2003). The complexity of family policy reform. The case of Norway, *European Societies*, 5(4): 419-443.

Ellingsæter, A. L. (2007). 'Old' and *new' politics of time to care: three Norwegian reforms, *Journal of European Social Policy*, 17:49-60.

Esping-Andersen, G. (2002). *Why we need a New Welfare state*. Oxford: University Press.

Gauthier, A. H. (2007). The impact of family policies on fertility in industrialized countries: a review of the literature, *Population Research and Policy Review*, 26:323-346.

Håkonsen, L., Kornstad, T., Løyland, K., & Thoresen, T. O. (2001). *Kontantstøtten - effekter på arbeidstilbud og inntektsfordeling (Cash-benefit - effects on labour supply and income distribution)* (5): Statistics Norway.

Knudsen, C. (2001). Kontantstøtten og mødres yrkesaktivitet i Finland og Norge. Likheter og ulikheter (The cash-benefit and mothers employment in Finland and Norway). *Søkelys på arbeidsmarkedet, 18*, 121-127.

Kornstad, T. and Thoresen, T.O. (2007). A discrete choice model for labour supply and childcare, *Journal of Population Economics*, 20:781-803.

Neyer, G. (2003). Family policies and low fertility in Western Europe: Working paper. Max Planck Institute for Demographic Research, 2003-021.

Pettersen, S.V. (2003). Barnefamiliers tilsynsordninger, yrkesdeltakelse og bruk av kontantstøtte våren 2002 (Childcare mode, labour market particiaption and use of cash-benefit) (9): Statistics Norway

Rønsen, M. (2001). *Market work, child care and the division of household labour - Adaptations of Norwegian mothers before and after the cash-for-care reform* (3): Statistics Norway.

Rønsen, M. (2005). *Kontantstøttens langsiktige effekter på mødres og fedres arebidstilbud* (Long term effects of use of the cash-benefit on mother and fathers labour supply) (23): Statistics Norway.

Schøne, P. (2004). Labour supply effects of a cash-for-care subsidy. *Journal of Population Economics, 17*(4), 703-727.

Stier, H., Lewin-Epstein, N., & Braun, M. (2001). Welfare regimes, family-supportive policies and women's employment along the life-course. *American Journal of sociology, 106*(6), 1731-1760.

Appendix 1. Second birth rates by use of childcare cash benefit. All

All	C1 (0 months)	C2 (1-6 months)	C3 (7-12 months)	C4 (13-18 months)	C5 (19-23 months)	C6 (24 months)
T1 (12-23 months)	0.045	0.078	0.096	0.140	0.149	0.235
T2 (24-35 months)	0.239	0.285	0.322	0.261	0.269	0.378
T3 (36-47 months)	0.310	0.285	0.293	0.284	0.281	0.350
T4 (48-59 months)	0.188	0.199	0.203	0.204	0.203	0.222

Appendix 2-5. Second birth rates by use of childcare cash benefit. Low, Medium, High and Very High Educational level

Low Educ.	C1 (0 months)	C2 (1-6 months)	C3 (7-12 months)	C4 (13-18 months)	C5 (19-23 months)	C6 (24 months)
T1 (12-23 months)	0.015	0.056	0.064	0.064	0.107	0.190
T2 (24-35 months)	0.116	0.139	0.149	0.124	0.132	0.268
T3 (36-47 months)	0.185	0.147	0.137	0.157	0.153	0.213
T4 (48-59 months)	0.103	0.100	0.108	0.090	0.113	0.154

Medium Educ.	C1 (0 months)	C2 (1-6 months)	C3 (7-12 months)	C4 (13-18 months)	C5 (19-23 months)	C6 (24 months)
T1 (12-23 months)	0.042	0.067	0.072	0.111	0.118	0.216
T2 (24-35 months)	0.186	0.240	0.269	0.202	0.220	0.352
T3 (36-47 months)	0.289	0.268	0.272	0.253	0.253	0.307
T4 (48-59 months)	0.188	0.215	0.191	0.217	0.198	0.224

High Educ.	C1 (0 months)	C2 (1-6 months)	C3 (7-12 months)	C4 (13-18 months)	C5 (19-23 months)	C6 (24 months)
T1 (12-23 months)	0.059	0.092	0.122	0.185	0.183	0.275
T2 (24-35 months)	0.337	0.367	0.427	0.361	0.361	0.453
T3 (36-47 months)	0.408	0.372	0.391	0.384	0.386	0.414
T4 (48-59 months)	0.251	0.241	0.285	0.267	0.273	0.275

Very high Educ.	C1 (0 months)	C2 (1-6 months)	C3 (7-12 months)	C4 (13-18 months)	C5 (19-23 months)	C6 (24 months)
T1 (12-23 months)	0.086	0.143	0.171	0.247	0.228	0.285
T2 (24-35 months)	0.427	0.435	0.535	0.445	0.455	0.586
T3 (36-47 months)	0.456	0.452	0.400	0.396	0.386	0.401
T4 (48-59 months)	0.309	0.254	0.300	0.348	0.320	0.243