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Active fatherhood policy and fertility in the Nordic countries:
A comparative study on the impact of father's use of parental leave on continued
childbearing in Norway and Sweden

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Abstract

In the Nordic countries gender equality is an explicit political goal integrated in present family policies. Norway and Sweden both offer paid parental-leave for approximately one year with earnings-related benefits, with certain periods reserved exclusively for the father. This paper examines the relationship between fathers' use of parental-leave and continued childbearing among couples in Norway and Sweden. These countries represent similar family policies, but differ concerning (political) context. While Sweden has a one-sided policy concerning gender relations, Norway has a less consistent policy giving incentives to both gender-equality and childrearing in the home. The analysis is based on longitudinal information on registered parental-leave use and childbearing of all intact unions during a 10-year-period. A hazard rate model is used to explore whether fathers' parental-leave use is positively associated with the couples continued childbearing. We expect that paternal involvement has a stronger positive effect on childbearing in Norway than in Sweden caused by a stronger selection of men into parental leave in Norway.

Introduction

The relationship between relatively high levels of gender equality and fertility in industrialized countries is increasingly pointed out. Traditionally, low fertility in industrialized countries have been linked to increasing female labour market participation and women's autonomy, e.g. (Becker, 1981,1991), but newer studies have found a positive macro-level correlation between female labour market participation and women's fertility, e.g. (Esping-Andersen, 2002). In order to understand the mechanisms that drive such positive correlation between female employment and fertility the need to elaborate the place of gender equality in theories of fertility decline has been pointed out. McDonald (2000) argues that low fertility must be seen as a result of a gap between a high degree of gender equality in individual-oriented social institutions and the lack of gender equality in family-oriented social institutions. He points out that while increasing proportions of women achieving higher education and participating in the labour market contributes to increasing gender equality in individual-oriented social institutions, gender equality is incomplete as long as there is not also gender equality in family-oriented social institutions. A crucial missing dimension is to give men space in the family sphere. Based on the argument of McDonald one might expect there to be a positive relationship between gender equality in the family and fertility at an individual level.

The Nordic countries is to be found in the Premier League when it comes to family policies, and female employment and childcare are characterized as more combinable than in other countries. The Nordic countries also distinguish themselves from other industrialized countries in the sense of having higher recuperation of postponed fertility in older ages. As part of the generous family policies, the Nordic countries offer paid parental leave for approximately one year with earning-related benefits. The programme has a clear gender equal dimension. First, it promotes the dual-earner family model by enhancing the reconciliation of work and family life, especially for women, and secondly, it promotes the dual-carer family model by gently forcing fathers to childcare of newborn children through a certain period reserved exclusively for the father.

The aim of this paper is to elaborate the relationship between use of gender equal family policy and fertility behaviour in Norway and Sweden. We investigate whether father's use of parental leave is related to continued childbearing among one-child and two-child couples in Norway and Sweden. A father's uptake of parental leave is associated with gender equality in the couple as it allows the woman to return to work faster, and signals a shared responsibility for children. Fathers who take parental leave are likely to be a selection of fathers with more interest in childrearing. Norway and Sweden represent very similar family policies and fertility regimes, but there are significant differences concerning the political context, making a comparative analysis interesting.

In a discussion of the impact of gender equality on childbearing, we want to underline that no country at the moment is close to a division of parental leave that indicates gender equality. A gender

equal division of parental leave would either be an equal division of the leave for all couples, or a distribution of couples where as many men as women chose to use a long leave. Both these scenarios are far from reality in any of the Nordic countries. The present situation may instead be seen as an increase in fathers' participation in childrearing. Whether this is a first step toward gender equality is too early to say. In our study, we see fathers' uptake of parental leave as important in the way it signals (i) a commitment to share the duties of childrearing with the mother, and (ii) an interest in children and the father-child relation as such. The Norwegian and Swedish contexts may make the selection of men with these characteristics different.

The paper is organised as follows. Next section will provide an orientation in the Norwegian and Swedish parental leave systems as parts of the Nordic welfare states, after which a description of the fertility pattern in Norway and Sweden follow. The differences in these legislations lead to our hypotheses of how parental leave use may correlate with continued childbearing to different degrees in Norway and Sweden. After the hypotheses the data and methods are described, followed by the results. A discussion of the results and possible developments of analyses will conclude the paper.

The Nordic welfare state model

The Nordic countries are often characterized as one welfare state model, e.g. (Esping-Andersen, 2002) with similar political, economic and social development in the post-Second World War period in terms of educational expansion, labour market structures and participation, as well as general content of welfare policies (Rønsen & Skrede, 2006). The Nordic countries are also described as leaders regarding the process towards gender equal welfare states. Female employment rates are high, also for mothers of small children. However, even though many consider the Nordic countries as one welfare regime, several studies have documented that there are considerable differences between the Nordic countries with regard to the historical development of their family policy regimes, the extent to which present family policies also integrate gender equality as an explicit political goal (Borchorst & Siim, 2002; Kjeldstad, 2001; Leira, 2002; Sainsbury, 2001; Skrede, 1999).

Furthermore, the Nordic countries may be described as having a common fertility regime. In line with other "Western countries" there is an ongoing postponement of parenthood, but what distinguishes the Nordic countries from other "Western countries" is a stronger recuperation at older ages (Andersson, Knudsen, Lappegård, & Rønsen, 2007).

The combination of high fertility and employment rates of mothers is often taken as an indicator of the impact of parenthood policies facilitating the reconciliation of work and childcare for both mothers and fathers, e.g. (Daly, 2000; Esping-Andersen, 2002; Stier, Lewin-Epstein, & Braun, 2001). The majority of women, including those with small children, are employed outside the home and men seem to be relatively more active in childrearing and household activities than in many other countries. Furthermore, Nordic family policies and gender equality have been closely intertwined and

welfare state interventions in gender and family arrangements have been widely accepted (Ellingsæter & Leira, 2006; Nordic Council of Ministers, 1995). The Nordic Council of ministers has, for example, stated that if gender equality is to be realised, 'the distribution of the workload between women and men in the family and society must be changed' (Nordic Council of Ministers, 1995).

In the Nordic countries the goal of gender equality is manifested in present family policies. This can best be exemplified by the earnings-related parental leave, which makes it affordable for both parents to make use of the parental leave for extended periods. The purpose of the universal parental leave programme has been, in addition to making paid work more combinable with childbearing, to encourage gender equality and a greater involvement of fathers in childcare. The way the parental leave system is organized in Norway and Sweden affects gendered behaviour in two ways. First, it enhances the reconciliation of work and family life for women as its income-replacement character provides incentives for them to become established in the labour market before considering childbearing. It also allows women to keep a foothold in the labour market while taking care of newborn children, which means that they can continue with labour market work after the leave. Sweden was the first country in the world to introduce a gender-neutral parental leave scheme in 1974, which gave the right to 6 months of paid leave from work after birth of a child. When the Norwegian parental leave programme was introduced in 1978, working parents were given the legal right to 18 weeks of paid leave in connection with childbirths. Since the introduction of the programme, the entitlements period has been stepwise prolonged. In Sweden, in 1989, it was extended to 15 months of which three months were paid at a low flat rate, while in Norway it was extended until one year in 1993.

Both Norway and Sweden are developing a system with a goal of altering gendered behaviour within the family by encouraging fathers to take parental leave. This is done by ear-marking part of the leave to the father which will be lost if not used by the father. Norway introduced a father's quota of one month in 1993 and Sweden followed in 1995. This rather radical approach to work-family policies was not a response to large-scale change or demand reported among fathers, but rather a follow-up of the political commitments to gender equality (Leira, 2006). In 2002, Sweden extended the quota to two months, while Norway assessed a fifth week in 2005 and a sixth in 2006. Through this earmarked fathers quota of the parental leave the policies are offering support for fathers as carers. When the fathers are given the opportunities for 'early bonding' between fathers and children it might affect their attitudes toward childcare and their aspirations for having more children.

The parental leave system in Norway and Sweden are thus based on the same principles, essentially providing around one year of leave that parents can share as they please between them, but with an incentive for fathers' usage through the fathers' quota. But there are some differences in the organization of the programmes. First, in Sweden all parents permanently residing in Sweden are entitled to parental leave and parents with no previous earnings prior to the use of leave receive only a

low flat rate. During the 1990s, this rate was equivalent to 6 EURO or US\$ 8 per day but it has recently been raised. In Norway eligibility to leave requires employment during 6 of the last 10 months prior to the birth. Father's benefit has, until 2000, been totally based on mothers earned parental rights, which means that if the mother has not been employed during the 6 of the last 10 months prior to the birth, the father will not be entitled to parental leave, even though he has been employed. The proportion of parental leave users of all parents is because of these differences much larger in Sweden than in Norway. From 2000 the Norwegian policy changed and fathers now may use parental benefits based on their own rights, except for the father's quota where the old rule still exists. Norwegian mothers who are not entitled to parental leave benefits receive a one-time tax-free cash payment at birth that in 1995 was 3,200 EURO or US\$ 4,300.

Furthermore, in Norway parents are given the choice between three leave programmes; Full-time leave for 52 weeks with 80 percent wage compensation or 42 weeks with 100 percent wage compensation, or part-time leave for maximum 104 weeks (2 years). Very few parents in Norway chose this last alternative. In Sweden, on the other hand, all leave are based on such time account scheme, where leave can be taken full-time, part-time or quarter-time until the child turns eight. This allows for more flexibility in the Swedish parental leave use and more variation in leave lengths. In Sweden income replacement was originally 90 percent. In 1995, 1996 and 1997 the income-replacement level was stepwise reduced to 75 percent, as public finances were strained, but raised again to the present level of 80 percent in 1998. In Norway, the income-replacement level is either 80 percent or 100 percent depending on the length of the leave. In both countries the parental leave benefits are financed through general taxes with no direct costs to employers. The level of the benefits is calculated on the bases of the income of the parent who takes leave of absence, up to a fixed ceiling, which is generally relatively high.

In the same way as the parental leave scheme have a fathers quota, the scheme also has a mothers quota; In Norway 3 weeks before birth and 6 weeks after delivery are reserved for the mother; In Sweden the quotas are gender neutral and mothers receive the same quota as fathers. However, fathers receive two weeks of daddy days to be used after the delivery to be at home together with the mother and child. Even though the parents can share most of the leave, fathers still use only a fraction of total leave.

[Table 1]

Table 1 demonstrate that, in both Norway and Sweden, the fraction of male leave users increased after the daddy month was introduced in approximately 1993 and 1995, but fathers on leave then took fewer days on average. This may be due to an influx of less motivated fathers, who used a few benefit days that would otherwise have been forfeited (Sundström & Duvander, 2002). The situation can still be

described in terms of fathers choosing whether to take leave, and if so, when and for how long, while mothers mainly consider the length of their leave (Bekkengen, 2002). Economic characteristics are important determinants of Norwegian and Swedish fathers' use of parental leave. Both mother's and father's earnings have a positive impact on father's uptake. Also, fathers with more education, employed in the public sector, and with partners with more education take more leave than other fathers (Bygren & Duvander, 2005; Haas, 1992; Lappegård, 2008; Nyman & Petterson, 2002; Näsman, 1992; Sundström & Duvander, 2002). In Norway it was found that decreasing wage gap between parents increased father's uptake of parental leave (Lappegård, 2008). The huge impact of the level of earned income before childbirth on the benefit level during parental leave is a strong incentive to establish oneself in the labor market before considering becoming a parent. Indeed, earned income is positively related to Swedish women's entry into motherhood (Andersson, 2000; Duvander & Olsson, 2001; Hoem, 2000). The same holds when entry into fatherhood is studied (Duvander & Olsson, 2001).

Fertility developments in Norway and Sweden

During recent decades, Norwegian fertility has been quite stable at a relatively high level in a European context, and in 2006 the TFR of Norway was 1.8. Swedish fertility, on the other hand, has evolved in a roller-coaster fashion (Hoem & Hoem, 1996), being positively related to the business cycle (Andersson, 2000; Andersson, 2004). After an increase in fertility during the economic boom by the end of the 1980s and early 1990s, Sweden experienced a sharp decline in fertility during the 1990s. In 1990, the total fertility (TFR) of Sweden was 2.1 children per woman and this was among the highest rates in Europe. It subsequently fell to an unprecedented low of 1.5 children per woman in 1997-99. Fertility has started to increase again (Andersson, 2004). In 2006, the TFR of Sweden was just over 1.8, which is similar to that of the other Nordic countries.

In Sweden, the mid-1990s was a period of economic hardship and the labour force participation of both women and men dropped. Many young women and men stayed in school longer when unemployment increased. The weaker attachment of young adults to the labour market was one of the reasons why fertility decreased during that period (Andersson, 2000; Hoem, 2000). The fertility decline was mainly due to young women postponing becoming mothers and two-child parents deciding not to have a third child. First births of women above 30 and second births were less affected. It has been suggested that the overall economic climate of the 1990s had a further role to play in the fertility decline than that given merely by the negative changes in individual labour market attachment of young Swedes. Hoem (2000) found that the unemployment level in the local municipality mattered for women's first-birth patterns also when the individual's own labour market status was considered. Cutbacks in family policies, like the aforementioned reductions in income-replacement levels during

parental leave, may also have affected fertility adversely. A reversal of such policy changes as the economy improved again by the turn of the century is likely to be positively related to the most recent increases in fertility.

[Figure 1]

Gender equality and fertility

Policies supporting gender equality are in many cases interpreted as having an impact on fertility in low fertility regimes (Andersson, 2005; Bjorklund, 2006; Rønsen & Skrede, 2006). Public policies are also at times seen as a possible remedy to low fertility both in research (McDonald, 2002) and in practice as for example, when Germany introduced a package of ambitious parental leave legislation as of January 2007, including months for the father, as one measure to make it somewhat easier to combine labour-market activity and childbearing in that country.

A positive correlation between gender equality in the home and fertility is often suggested, e.g. (Bernhardt, 1993; Joshi, 1998), and a positive correlation between gender equality and fertility on the individual level has been found in some studies. Mencarini & Tanturri (2005) finds that a gender-symmetric role-set, found among a high socio-economic parents in Italy, increases their likelihood to have another child. Torr & Short (2004) shows that individual equity behaviour (division of household work) correlate with the transition to a second child among US couples. Buber (2002) shows that fathers' participation in childcare correlates with mothers' childbearing intentions. More specifically related to national policies and childrearing, the sharing of parental leave between parents can be considered as one measure of equality. Earlier Swedish studies suggest a statistical association of the father's parental leave use with continued childbearing among Swedish couples during the 1970s to 1980s (Olah, 2003) and 1990s (Duvander & Andersson, 2006). The Swedish study from the 1990s will be the base for comparison in this paper.

The major argument put forward for why gender equality would increase fertility is one of compatibility. A more equal division of labor in the household would ease women's work burden at home and thus enhance the degree of compatibility between childrearing and their labor force participation. Such compatibility makes it easier to realize childbearing plans. A shared parental leave indicates a shared responsibility for childcare during the child's first year(s), and signals the father's commitment to share the care of children. A higher degree of gender equality might also affect fertility positively, in a more indirect way, if it affects women's well-being (Blair, 1993; Glass & Fujimoto, 1994) and marital stability (Olah, 2001) positively. Women in gender equal relationships may be more prone to continue childbearing in their present relationship. It is equally important to consider the role of the father's desire for more children as both parents' childbearing plans are decisive for continued childbearing (Jansen & Liefbroer, 2006; Thomson, 1997; Thomson & Hoem, 1998). There are some

evidence that fathers in gender equal couples are also more child-oriented (Bulanda, 2004; Hyde, Essex, & Horton, 1993; Kaufman, 2000). The actual experience of parental leave can both be negatively and positively related to the desire for more children. Men who share the leave may gain further interest in children so that their desire for more children is strengthened. On the other hand, the work burden of childrearing noticed while on leave may impede these men's desire for further children. The same holds with respect to the mother's experience of parental leave and her childbearing desires.

The relationship between gender equality in the home and fertility may vary depending on the context, as variations in divisions of unpaid work depend on national context even when individual characteristics are considered, see for example (Geist, 2005; Hook, 2006). The meaning and consequences of the division of unpaid work may thus vary considerably. As we know there is a positive association of father's use of parental leave with second-birth and third-birth in Sweden (Duvander & Andersson, 2006), we hereby test this hypothesis more generally by comparing to a similar country. In this paper we compare the individual level results in Norway and Sweden, which gives us the opportunity to disentangle the contextual impact of parental leave on continued childbearing. We expect a positive association also in Norway, but the differences between countries are expected to lead to a stronger effect in Norway because of a stronger selection of men into gender-equal behaviour.

The parental leave policy has a clear gender equality intention in both countries, but the sum of the Norwegian policy towards family and work may be described as 'gender equality light' (Skrede, 2004) in comparison to a more clearly gender equal Swedish system. There are two main reasons to these differences. First, Sweden has consequently pursued the goal of gender equality by a one-sided employment-oriented parental-leave policy. Norway has a more two-edged family policy where the parental leave is one part. As a supplement to the parental leave system Norwegian family policy also includes an extended care-leave option as an alternative to the use of public childcare. A cash allowance to parents who take care of their children themselves at home instead of using public supported kindergarten is offered from the child is 1 year old until they are 3 years old. Mothers, who are the main users of this allowance, will thereby get long career interruptions during the childbearing years. This is in sharp contrast to the Swedish incentive to go back to work after a less extended parental leave period. The dualism in the Norwegian family policy thereby presents the possibility of gender-equal parenthood more as an offer than as a norm. Secondly, the Norwegian programme has a gender inegalitarian component, whereby the father's eligibility for leave is dependent on mothers work status, but not vice versa. In Sweden, on the other hand, the father's use of parental leave is independent on the mother's connection to the labour market. The parental leave is truly individual in that half the period formally is dedicated to the mother and the other half to the father. In the vast

majority of cases where the mother uses more than half she needs the father to sign over the right to use his days to her.

The differences in the country context lead to the expectation that fathers are more polarised in Norway than Sweden and that paternal involvement thereby will have a stronger positive effect in Norway than Sweden. Since gender equality is more integrated in the Swedish parental leave model than in the Norwegian model, the policy may differentiate fathers' behaviour more effectively in Norway.

Data and methods

The Swedish data are derived from Swedish population registers and cover the period 1988-99, and the Norwegian data are derived from Norwegian population registers covering the period 1993-2003. The datasets comprise demographic information on all co-residing couples with one or two common children who ever lived in Sweden and Norway during those periods. The demographic data have been merged with information on registered earned income of these parents stemming from Swedish and Norwegian tax registers. Information on educational attainment has been added from other administrative registers. The datasets cover all couples where both partners are Swedish-born or Norwegian-born and where the couple's first common child also is the first child of the mother. Observations are censored when parents separate. The data on earned income are given on a yearly basis and include income replacement during periods of sickness and parental leave. Parental leave benefits are specified separately. As the information is yearly, we are not able to sort out spells of parental leave and labour market work within a given year. We use the information on paid parental leave benefits during the period following childbirth as a determinant of the propensity to have another child during subsequent years.

As the information on income is given on a yearly basis and we want to follow parents' uptake of parental leave immediately after childbirth, we have restricted our data set to couples with a child born in January. The Swedish data comprise 34,000 one-child couples and 27,000 two-child couples in 1988-99, and the Norwegian data comprise 17,333 one-child couples and 12,030 two-child couples in 1993-2003. We study the amount of parental leave benefit paid to fathers and mothers of such children during the first two years following childbirth and relate these amounts to the total earnings of the same parents during the same period. This gives the fraction of earnings that comes from the income replacement of the parental leave system. This amount - the fraction of earnings that comes from taking parental leave - is used as a proxy for the fraction of time parents were on leave during that period. In our data, we have unfortunately no information on the actual number of days that parents were on leave. We use a reference period of two years after childbirth since most parents are able to take the main part of their parental leave within that time. Fathers who participate more actively in the

parental leave program often take most of their leave towards the end of the couple's parental leave period, which is likely to occur more than one year after childbirth for Swedish couples. Our design means that couples that have another birth within this two-year period necessarily had to be excluded from our study. This reduced our sample size; for Sweden from 34,000 one-child couples to 28,500 such couples and from 27,000 two-child couples to 26,000 couples of that kind, and for Norway from 17,333 one-child couples to 14,856 such couples and from 12,030 two-child couples to 11,209 couples of that kind.

In our analyses of the impact of parents' uptake of parental leave on continued childbearing, we relate subsequent registered births to the corresponding exposure times of "risk" of having another child. This amounts to an event-history analysis of childbearing behaviour where we estimate the impact of different levels of parental leave use on the propensity to have another child, when controlling for the simultaneous impact of other demographic and socio-economic variables known to be related to both leave use and childbearing. The estimated risks reflect both the timing and the quantum of the event we study. This technique is a standard tool in analyses of time-dependent data like ours. (For an introduction to event-history analysis, see Allison (1984).

We estimate models for second and third births separately, since we know that fertility patterns differ by parity. The large majority of all one-child parents in both Norway and Sweden proceed to have a second birth, which means that models for that parity progression mainly cover the timing of such births, see Olah (2003), for further analyses of second births in Sweden). Around half of two-child couples also proceed to have a third child which means that the latter models measure the timing of such births as well as distinguish between those who eventually have such a child and those who do not, see Berinde (1999) on third births in Sweden).

Our demographic control variables include *age of woman* in three-year age groups from 19-21 to 40-42 years, *age difference between parents*, and *time since previous birth*, that is, age of the youngest child. We also control for *calendar year period* with two-year groups from 1988-89 to 1998-99 for Sweden and from 1993-94 to 2003 for Norway. The estimates of these control variables are not presented in this paper but are available in Duvander & Andersson (2004). As both continued childbearing and parents' use of parental leave are influenced by human capital and economic resources we present models controlling for the earned income of the couple and for parents' educational attainment. The *couple income*, recalculated at the price level of 1995, is categorized into low level of annual earnings (0-250,000 Norwegian/Swedish kronor⁴), medium earnings (250-400,000 Norwegian/Swedish kronor), high earnings (400-550,000 Norwegian/Swedish kronor), and top earnings (more than 550,000 Norwegian/Swedish kronor). We include the *educational level* of both

⁴ The value of one Swedish krona is approximately 11 Euro cents and 13 U.S. cents.

father and mother, for which information is updated every year and categorized into primary, secondary, and higher education.

Our primary independent variables are father and mother's uptake of parental leave benefits. As patterns in parental leave use differ between men and women, we have categorized the variables for fathers and mothers differently. We have also made some adjustments for the Norwegian data in order to make the groups as comparable as possible. *Father's use of parental leave* is categorized into a) no leave benefit, b) leave benefit amounting to up to 3 percent of the earned income during the two years following childbirth, c) leave benefit equivalent to 3-10 percent (Sweden) and 4-5 percent (Norway) of his income, d) leave benefit equivalent to 11-25 percent (Sweden) and 5-9 percent (Norway) of his earned income, and e) benefit equivalent to more than a quarter (Sweden) and 10 percent (Norway) of that income. A situation where the father has received less than 3 percent of his earned income from the parental leave insurance in Sweden means that he probably only has used the so called "daddy days". These days are taken in immediate connection to the birth and do not imply a situation where the father is at home with the child on his own. More extensive uptake of parental leave is more likely to refer to situations where the father stays at home as the primary caregiver of the child. Fathers in Norway are also entitled to such days, but they are unpaid, if not especially agreements are made with the employees, which means that Norwegian fathers who only uses these "daddy days" will most likely be found in the no leave benefit group.

Mother's use of parental leave is categorized into a) leave benefit equivalent to less than 25 percent of her earned income during the two years following childbirth, b) leave benefit equivalent to 25-50 percent of that income, c) leave benefit equivalent to 51-75 percent of her earned income, and d) more than 75 percent of the earned income being an income replacement from the parental leave system. The latter category is likely to reflect a situation where a mother only shortly (or not at all) returned to work during the two-year period immediately following childbirth. In addition, Norwegian mothers are also categorized as "no leave benefit". Mothers in Norway with no earning prior to birth and therefore not eligible to parental leave benefits receive a one-time tax-free cash payment at birth, while the same group in Sweden receives benefits, but at a low flat rate.

[Table 2]

Table 2 describes our study population of one- and two-child parents in Norway and Sweden by providing the distributions of exposure time to the risk of a second and a third birth, respectively, over the various categories of father's and mother's uptake of parental leave, couple income, and educational attainment. Patterns are quite similar for the two countries even though there are some

country-specific differences to be pointed out. The proportion fathers in the ‘no leave benefits’ are distinctively larger in Norway than in Sweden, which can be related to the fact that fathers in Norway are dependent on mothers earned right in order to receive parental benefits and the fact that fathers who only uses the so called “daddy days” are included in the group. Also, the group that takes more than the father’s quota is larger in Sweden than in Norway, which shows that not only father’s taking parental leave at all in Norway is a more selective group than in Sweden, but also fathers taking longer leave are a more selective group in Norway than in Sweden. The category of mothers where less than a quarter of the earned income came from the parental leave insurance is equally small in both Norway and Sweden. Only 4-5 percent of mothers fall into that category. The categories where up to half and up to three quarters of the income came from parental leave benefits are the most common for mothers and the exposures corresponding to the highest dependence on the parental leave insurance.

Results

The results of our models are presented in Table 3. The estimates are expressed in terms of relative risks for the various categories of our variables. A risk value greater than one indicates that the propensity to have another child is higher than for parents of the reference category of the same variable; a risk value lower than one indicates a reduced risk of having another child when the effects of the other covariates of the model are held constant.

[Table 3]

The models on second births (Table 3a) reveal a positive association of father’s uptake of parental leave with that parity progression for both Norwegian and Swedish couples. Couples where the father takes parental leave have considerably higher second-birth intensities than couples where the father takes no leave at all, and second-birth risks increase with an increasing level of paternal parental leave use. The associations are stronger in Norway than in Sweden, both of fathers taking parental leave at all and of the level of paternal leave use. For the small category of one-child couples where the father took very extensive leave, there is reduced second-birth intensity. The relationship between father’s parental leave use and second birth is strongest among Norwegian fathers taking longer leave than the father’s quota.

The relationship between mother’s parental leave use and second births shows different pattern in Norway and Sweden. In Sweden second-birth risks are highest for the most common categories of couples where the woman has received between one and three quarters of her earnings from the parental leave system. Very low and very high levels of maternal uptake of leave are related to a reduced risk of second birth. In Norway there is a more linear relationship between mother’s leave use after first child and second-birth fertility. Couples where the mother got more than three quarters

of her income from leave benefits have the highest second-birth intensities. This group reflects mothers that either have not returned to the labour market or returned to the labour market, but at a reduced basis.

Table 3b shows a positive relationship between father's uptake of parental leave on third-birth fertility in both Norway and Sweden. However, while the positive association becomes stronger on third-birth intensity than on second-birth intensity in Norway, it is weaker on third-birth intensity than on second-birth intensity in Sweden.

The impact of the mother's use of parental leave on third birth in Norway and Sweden are more similar than on second birth. For Sweden there is a J-shaped pattern in the relationship between mother's leave use after the second birth and third-birth fertility. Couples where the mother got more than three quarters of her income from leave benefits have by far the highest third-birth intensities. The same group also has the highest third-birth intensities in Norway, but here mothers with no leave benefit have equally high third-birth intensity. In many cases, such an extensive uptake is likely to reflect a situation where the mother never returned to the labour market or only partly as the couple was waiting for the arrival of a third child. In Norway, the two-child mothers with no leave benefit might reflect the same group of mothers as those never returning to the labour market after having their second child.

Summary and discussion

The period of focus in this paper, mainly the 1990s, is a period with high focus on the issue of reconciliation of work and family with especially attention to the role of the father's. The implementation of the father's quota — Norway 1993 and Sweden 1995 — was a political action with an intention of influencing the gender balance in the family. Most fathers in the two countries responded positively to the policy and the majority of the father's uses their reserved period of the parental leave. However, the mother still uses the lion share of the total leave period and neither Norway or Sweden is close to a division of parental leave that indicates gender equality. In this paper father's uptake of parental leave have been used as an indicator of both commitment to share the duties of childrearing with the mother and an interest in children and the father-child relation as such.

The analyses in this paper finds a positive association of father's uptake of parental leave on continued childbearing, but we are careful in not claiming that our findings necessarily reflect the causal impact of gender-equal behaviour on couple fertility. However, similar findings in both Norway and Sweden, makes the evidence that increased paternal involvement in childrearing is positively related to continued childbearing more robust. As we assumed, differences between the countries showing a general stronger association of fathers taking parental leave and the uptake for higher parities in Norway than in Sweden. Also, the level of the estimated second- and third-birth risks are

opposite for Norway and Sweden: In Norway the risks of fathers taking leave and the uptake are higher for third birth than for second birth, while in Sweden the same risks are higher for second birth than for third birth. Norway is characterized as having a more dualistic family policy in comparison to Sweden and the possibility of a gender-equal parenthood are more presented as an offer than a norm such as in Sweden. Also, the Norwegian parental leave policy has an inegalitarian component, resulting in a more polarized use of parental leave among fathers in Norway than in Sweden. Since Norwegian fathers use of parental leave is depending on mothers work status and eligibility for leave, a more selective group of fathers take leave in the first place and thereby an interpretation of a stronger association in Norway than in Sweden. However, it is important to underline that we should be careful when we interpret the differences between the two countries. In the analyses we have used rough measures of parent's use of parental leave and we have only looked at parents use of parental leave separately and not at the dynamic between the mother and the father in a couple. For that, there is need of more sophisticated data than was available at this time and should be a natural next step for further investigation.

Figure 1. Total fertility rate (TFR) in Norway and Sweden, 1988-2005

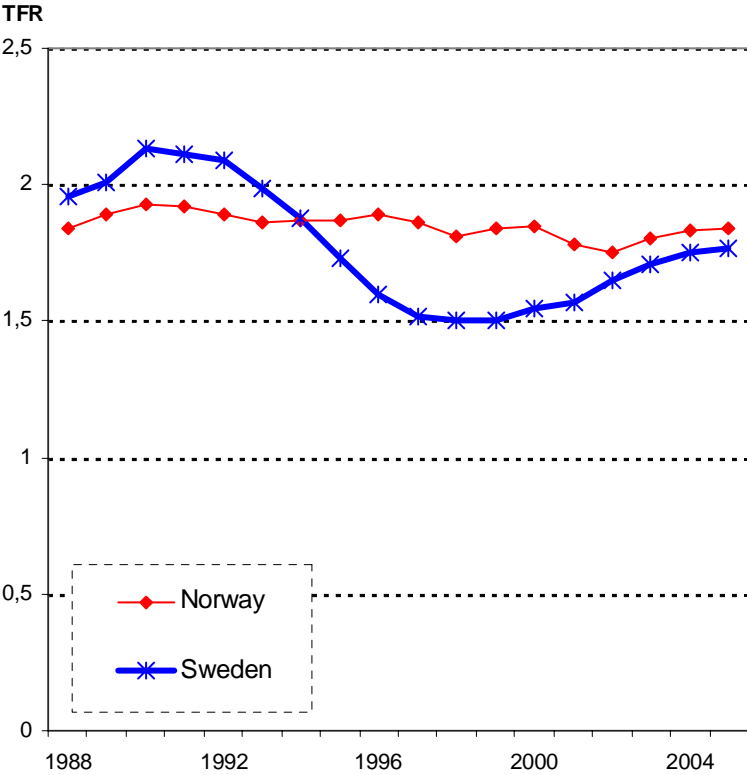


Table 1. Fathers Share of Parental Leave Use in Norway and Sweden, 1988-2003

Norway		Sweden	
Fraction of Men of Parental Leave Users (Percent)	Average Number of Days Used by Fathers Who Took Leave in a Year	Fraction of Men of Parental Leave Users (Percent)	Average Number of Days Used by Fathers Who Took Leave in a Year
1988		23.1	31
1989		24.6	32
1990		26.1	33
1991		26.5	39
1992	2.3	46	26.9
1993	3.9	39	27.4
1994	25.2	23	28.3
1995	33.1	24	27.9
1996	35.8	24	31.1
1997	37.5	24	30.9
1998	38.5	24	32.4
1999	39.1	24	36.2
2000		23	37.7
2001			39.9
2002			41.6
2003			42.7

Source: Norway: The National Insurance Association; Sweden: The National Insurance Agency

Table 2. Characteristics of Study Populations of One- and Two-child Parents in Norway and Sweden: Exposures of Risk to a Second and a Third Birth. Fractions of Couple Months for Each Variable (Percentages)

Variable	Norway		Sweden	
	One-child Parents	Two-child Parents	One-child Parents	Two-child Parents
Father's Uptake of Parental Leave during the First/Second Child's First Two Years				
No Leave Benefit	51.7	49.2	13.8	11.7
Less than 3 % of Earned Income	14.5	20.6	38.6	39.6
3-10 % of Earnings (Sweden)				
3-4 % of Earnings (Norway)	22.1	22.7	31.0	33.2
11-25 % of Earnings (Sweden)				
5-9 % of Earnings (Norway)	8.0	5.2	12.7	12.6
More than 25 % of Earnings (Sweden)				
More than 10 % of Earnings (Norway)	3.7	2.2	3.9	2.9
Mother's Uptake of Parental Leave during the First/Second Child's First Two Years				
No leave benefit	26.5	19.4		
0-25 % of Earned Income (Sweden)				
1-25 % of Earned Income (Norway)	3.4	4.6	5.0	3.9
25-50 % of Earnings	44.4	49.6	40.1	40.3
51-75 % of Earnings	13.0	14.9	40.7	40.8
More than 75 % of Earnings	12.6	11.6	14.1	15.0
Couple Earnings				
Low	26.6	19.9	24.2	20.3
Medium	35.1	32.6	55.4	63.7
High	26.7	30.1	16.4	13.2
Top	11.6	17.5	4.1	2.8
Woman's Educational Level				
Primary	32.6	25.6	12.6	11.2
Secondary	41.8	44.6	59.9	58.5
Higher	25.3	29.7	27.5	30.3
Man's Educational Level				
Primary	30.9	24.2	19.4	18.8
Secondary	47.3	49.6	55.5	52.8
Higher	21.2	26.0	25.1	28.3

Table 3a. Relative Risk of a Second Birth of Norwegian and Swedish Couples with One Common Child, by Parents' Parental Leave Use and Socio-economic Characteristics, Standardized for Mother's Age, Age Difference between Parents, Time since First Birth, and Calendar Year

Variable	Norway	Sweden
Father's Uptake of Parental Leave during the First/Second Child's First Two Years		
No Leave Benefit	1	1
Less than 3 % of Earned Income	1.44	1.13
3-10 % of Earnings (Sweden)	1.60	1.18
3-4 % of Earnings (Norway)		
11-25 % of Earnings (Sweden)	2.18	1.17
5-9 % of Earnings (Norway)		
More than 25 % of Earnings (Sweden)	1.93	0.94
More than 10 % of Earnings (Norway)		
Mother's Uptake of Parental Leave during the First/Second Child's First Two Years		
No leave benefit	0.89	
0-25 % of Earned Income (Sweden)	0.85	0.84
1-25 % of Earned Income (Norway)		
25-50 % of Earnings	1	1
51-75 % of Earnings	1.02	1.06
More than 75 % of Earnings	1.11	0.96
Couple Earnings		
Low	0.96	0.83
Medium	1	1
High	1.03	0.98
Top	1.11	1.05
Woman's Educational Level		
Primary	0.82	0.75
Secondary	1	1
Higher	1.18	1.23
Man's Educational Level		
Primary	0.84	0.89
Secondary	1	1
Higher	1.02	1.18

Note: Reference level of each variable given without decimals

Table 3b. Relative Risk of a Third Birth of Norwegian and Swedish Couples with Two Common Children, by Parents' Parental Leave Use and Socio-economic Characteristics, Standardized for Mother's Age, Age Difference between Parents, Time since Second Birth, and Calendar Year

Variable	Norway	Sweden
Father's Uptake of Parental Leave during the First/Second Child's First Two Years		
No Leave Benefit	1	1
Less than 3 % of Earned Income	1.71	1.04
3-10 % of Earnings (Sweden)	2.07	1.07
3-4 % of Earnings (Norway)		
11-25 % of Earnings (Sweden)	3.29	1.07
5-9 % of Earnings (Norway)		
More than 25 % of Earnings (Sweden)	3.11	0.99
More than 10 % of Earnings (Norway)		
Mother's Uptake of Parental Leave during the First/Second Child's First Two Years		
No leave benefit	1.42	
0-25 % of Earned Income (Sweden)	0.90	1.03
1-25 % of Earned Income (Norway)		
25-50 % of Earnings	1	1
51-75 % of Earnings	1.22	1.09
More than 75 % of Earnings	1.44	1.34
Couple Earnings		
Low	1.18	1.26
Medium	1	1
High	0.94	0.94
Top	1.01	1.10
Woman's Educational Level		
Primary	0.97	0.85
Secondary	1	1
Higher	1.38	1.55
Man's Educational Level		
Primary	0.84	0.92
Secondary	1	1
Higher	1.06	1.22

Note: Reference level of each variable given without decimals

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