Domestic Equality and Marital Stability

Does More Equal Sharing of Childcare affect Divorce Risk?

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Abstract

In 2001, a new reform was adopted in Iceland, guaranteeing fathers three months paternity leave, implemented in stages. Parents who had a child in 2001 had the option to add one month of paternity leave to the existing 6 month long parental leave which they would have to forgo if not used by the father while parents who had a child before were did not get this option. This created large economic incentives for parents to involve fathers in caring for their children during their first months. In this paper we use the precise timing of the introduction of the paternal quota in Iceland to evaluate the causal effects of paternity leave on parents' earnings, the gender wage gap and marital stability. The results are obtained using detailed register based panel data, comparing families who had a child just before or just after the reform. Spouses who are entitled to paternity leave are less likely to divorce during the first years of the child's life, the period where most divorces take place. Furthermore, we also find that the reform reduced the earnings gap between couples.

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1 Introduction

Within economics, children are generally assumed to increase marital stability. Furthermore, high level of specialization within the relationship, where women usually specialize in housework and men specialize in work in the labor market, has often been argued to decrease the likelihood of divorce. Becker (1991) views the production and rearing of children to be the main purpose of marriage and families. According to him, the main function of marriage is to create a joint production unit which thereby enhances efficiency and affords individuals higher standards of living than if they remained single. Children in such a marriage can be considered as a long-term marital-specific investment, and thus increase the benefits of the marriage and thereby the cost of a divorce.

Some evidence support this view by showing that men and women have preferences for traditional gender roles and that women's dependence on their spouses is an important contributor to marital stability. Heckert et al. (1998), Jalovaara (2003), and Liu and Vikat (2004) find that divorce becomes more likely if a woman earns more than her husband and Bertrand et al. (2013) show that couples prefer men to earn more than their wives, and that marriages where the wives earn more are more likely to end in a divorce.

However, a number of recent studies cast doubt on these findings and suggest that expectations and preferences regarding marriage, fertility and gender equality may be changing. Cohabiting couples in the U.S. have been found to be more stable when there is higher equality in terms of household chores and income (Brines and Joyner, 1999). Schoen et al. (2006) find that wives' full-time employment is associated with increased marital stability, and the findings of Sayer and Bianchi (2000) and Sayer et al. (2011) suggest that women's economic independence is not the cause of marriage dissolutions but rather renders unhappy wives able to leave. A recent paper exploring Danish families (Svarer and Verner, 2008) suggests that children do not increase marital stability but rather raise the probability of divorce. On the other hand, Sigle-Rushton (2010) finds divorce rates to be lower in families where husbands help more with housework, shopping and childcare.

Fertility and domestic equality are also highly relevant for labor market outcomes. Although gender equality in the labor market has increased considerably in the last decades, both in terms of labor market participation and earnings, a persistent gap remains. Recent evidence suggests that domestic inequality, in particular when it comes to taking care of children, can explain a significant part of this gap. In a report on gender equality, OECD (2012a) notes that the gender pay gap increases significantly after motherhood, from about 7% to 22 %. Bertrand et al. (2010) find that while male and female MBAs have almost identical earnings, starting their careers, their income quickly diverges and identify the presence of children to be the main culprit, as mothers work shorter hours and have greater career discontinuity.

In this paper we exploit a policy reform that took place in Iceland in 2001 to investigate how increased domestic equality effects divorce rates and labor market outcomes. Three months of paternity leave were added to an existing 6 month long leave. The reform was implemented in stages such that in 2001 one month of the parental leave was earmarked to fathers, in 2002 the number of months a reserved increased from one to two and to three in 2003.

The notion that domestic equality is a necessary premise for closing the gender gap in the labor market has inspired policy makers in several European countries to make changes to their parental leave systems in order to incentivize parents to share the burden of child-rearing more equally. Iceland,

Sweden, Norway and Austria are among the countries, that have introduced parental leave systems, where part of the leave can only been used by the fathers. If such a policy is effective in altering the inner workings of the household it could potentially have an effect on the differences in men and women's labor market outcomes. Furthermore, an often disregarded effect is that the shift toward greater equality can affect the gains from relationships and therefore relationship stability.

The Icelandic policy reform is particularly interesting as it gave men the largest non-transferable share (3 months out of nine) of parental leave in the world. Furthermore, Iceland and Sweden are the only countries giving equal non-transferable parental leave rights to mothers and fathers.[1] The take up rate of the paternity leave in Iceland was also high and the growth in the share of men in total parental leave has been much steeper than in the other Nordic countries.[2] Effectively, it shifted the average share of fathers in the take-up of parental leave from 0% to taking one third of the total leave.

While there are several papers that investigate how parental leave (that is in most cases only used by mothers) affects parents and children (e.g. (Lalive and Zweimüller, 2009; Carneiro et al., 2011) there are only a handful of papers that investigate the causal impact of earmarking a part of the parental leave to fathers. Among them is Johansson (2010) who investigates the effects on earnings of Swedish paternity leave reform in 1995 and 2002 by using a difference-in-difference (DD) approach and fails to find any evidence that paternity leave affects mothers' and fathers' earnings. Rege and Solli (2010) estimate a DD model that exploits an exogenous variation in paternity leave in Norway provided by an introduction of a 4 week paternity quota in 1993 and find a negative effect of paternity leave on fathers' earnings. Cools et al. (2011) confirm this when they combine the IV approach with the DD approach in order to obtain the causal effect of the same reform and they also show that the reform had negative impact on earnings and employment of mothers, both in the medium and long run. Ekberg et al. (2013) find strong short-term effects of incentives on male parental leave uptake but no significant effect on parent's long-term wages and employment. Furthermore, they do not find significant effect on how parents split household work where they measure the shares of household work with the shares of the leave taken for care of sick children. In contrast, using survey data, Kotsadam and Finseraas (2011) apply a regression discontinuity (RD) approach to estimate the effect of the Norwegian parental leave reform in 1993 and find that the daddy quota reduced conflicts over household division of labor and led to more equal sharing of housework in the long run.

This paper investigates the consequences of reserving part of the parental leave for fathers on the gender wage gap and marriage stability in Iceland. In order to deal with the selection problem we use the introduction of the paternal quota in Iceland on January 1st 2001 to evaluate causal effects of paternity leave on parents' income. This allows us to assess whether such a reform does actually achieve its end of increasing equality and reducing the gender wage gap by facilitating more equal sharing of responsibility for child care and house work between men and women.

To the best of our knowledge, this is the first paper that focuses on the effect of paternity leave and more equally shared child-raising on divorce risk.[3] Furthermore, it is one of few papers that

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[1] In Sweden, men and women each get 2 non-transferable months (out of 16)

[2] During the first year approximately 50% of fathers used their allocated paternity leave, by 2005 almost 90% of fathers were using their allocated 3 months.

[3] Cools et al. (2011) investigate the effect of the introduction of a 4 week paternity leave in Norway in 1993 on various children's and parent's outcomes, one of them being divorce when the children turn 14 but are not able to find any significant effect. We focus on divorce at various points in time but focus rather on the short term as we want to investigate whether the paternity leave helps parents to get through the 'shock' brought to the relationship with the birth of a child and since most parents who separate do it when their children are young.

investigates the effect of paternity leave on the gender wage gap and the system under investigation is also different, in many ways, from other paternity leave systems that have been studied previously.

Our findings show that the introduction of the paternity leave had a significant and sizable effect on the probability of parents staying together during the first years after the child was born. Furthermore, the reform also reduced the earnings gap between couples.

Our identification strategy is based on the fact that parents who had their youngest child after the reform date did receive a treatment, i.e., paternity leave, and parents who had their youngest child before the reform did not. In order to identify causal effects of the reform we can therefore compare these two groups of parents. As the policy process was quite fast, the new law on maternity/paternity and parental leave was passed on May 9th 2000 and the day of implementation was January 1st 2001, parents who gave birth around the time of the reform threshold could not have known about the reform at the time of conception.

The rest of the paper is organized as follows: Section 2 discusses the institutional setting and the reform. In section 3 we describe our data and the outcome variables under consideration. Section 4 presents our empirical approach. In Section 5 we present main results while section 6 concludes.

2 Theory on marital stability

Becker et al. (1977) were the first ones to provide a theoretical framework for studying the marriage institution. Their economic approach to the family interprets behaviors such as childbearing, marriage and divorce to be active choices of maximizing individuals. According to this view, the marriage institution is a highly efficient setup for individuals when one partner specializes in market work while the other specializes in domestic work.

As a consequence, if partners start invading each other's territory, specialization is reduced and the gains from marriage decline. Furthermore, the decision to stay married depends on the comparison of utility while married and the utility associated with the outside option of a divorce so this reduces the desirability of staying married. Due to greater male attachment to the labor force and generally higher wages and the fact that it is unavoidable that women take care of carrying and breastfeeding their children, the most stable marriages are those in which the husband exchanges economic support for his wife's household tasks, and vice versa.

The Beckerian model was heavily criticized by Oppenheimer (1994, 1997), from both a theoretical and empirical perspective. He put forward an alternative model, often referred to as the flexibility model, that provides different predictions on the how marital stability is affected by female employment. One of his main criticism is the unrealistic assumption of lifelong employment and argues that high degree of specialization puts relationships at risk as a temporary or permanent incapacity of a specialized agent implies that functions vital to the well-being of household members are not carried out. In contrast to the the Beckerian model, the flexibility model predicts that shared responsibility of bringing home income and taking care of the housework reduces the income risk of households, bringing more financial stability to households and less stress and thereby rendering them more robust to outside shocks.

There is also a growing literature that looks at the role of gender identity on family formation and marital stability. Bertrand et al. (2013) show that societal norms, that wives should not earn more than their husbands, affect marriage formation. Moreover, couples where the wife earns more than

the husband are less satisfied with their marriage and are more likely to divorce. Finally, women who earn more than their husbands are also found to carry out a greater share of the household chores than women whose partners earn more than them. These findings are therefore in contrast with the predictions of the Beckerian model where the benefits of marriage stem from specialization and predict a positive relationship between the couple's earnings gap and women's share of household tasks.

The flexibility model predicts that shared responsibility of bringing home the bacon renders relationships more robust and has found considerable support by empirical evidence (e.g. Bramlett and Mosher, 2002; Schoen et al., 2006). It is interesting to relate the findings of Bertrand et al. (2013) to these predictions and they imply that once the wives start bringing home the filet mignon, marital stability is put at risk. This suggests that there might be that marital stability increases along the distribution of the wives share of household income until equality is reached but once the couple passes this threshold they put the stability of their marriage at risk.

These empirical findings also imply that even though the theoretical models discussed above provide elegant ways of thinking about marriage and clear predictions on how different shocks affect marital stability, the marriage institution is more complex and gender identity also matter. The effects of reforms that have the potential of changing social norms based on gender identity or household income distribution are therefore hard to predict.

3 Institutional setup - the parental leave scheme

3.1 The parental leave scheme

In the year 2000, the Icelandic Act on Parental Leave underwent significant changes. A paternity quota of the paid parental leave was introduced on January 1st 2001. One month, of the total of seven months of paid parental leave, was reserved exclusively for the father. This month was therefore not transferable and if not taken by the father, the couple would loose that month. Importantly, the right to parental leave in Iceland is not dependent on the parents' marital status, and a non-custodial parent has a right to maternity/paternity leave if the consent of the parent exercising custody is obtained (See Act on Maternity/Paternity Leave and Parental Leave No. 95/2000, Article 8), and a sole custodian cannot use the earmarked leave of the other parent.[4]

The introduction of the paternity leave coincided with an increase of total time of parental leave from 6 to 9 months. Iceland thereby gave men the largest non-transferable share (3 months out of nine) of parental leave in the world. Parents who were active in the labor market were paid 80% of their average salaries during the leave.

Prior to this reform, there was in effect a double system, where people's right to maternity and paternity leave depended on whether the mother worked in the private or the public labor market. Women in public service had the right to six months of paid maternity leave, which included three months at the average salary she had received for the previous six months, and three months at her fixed salary. Also, the mother in public service could lengthen her maternity leave against a reduction in payments relative to the length of the leave. In the private labor market, payments were divided into six month birth grants and per diem payments. Only mothers received the birth grants, which

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[4]The only case where the earmarked maternity/paternity leave can be used by the other parent, is when one off the parents dies before the child reaches the age of 18 months

were a fixed amount and were unrelated to labor market participation. The per diem payments were tied to labor market participation, and could be shared by both parents.

Most importantly though, prior to the reform, fathers did not have a separate or independent right to paternity leave, since a father's right to paid leave was based on the mother's right and the father could only receive per diem payments instead of the mother if she wished and then only after she had received per diem payments herself for at least one month. In practice, a very small percentage of parents used their right to share parental leave in this way under the old law.

It is clear from the new law that equality between the genders was given serious consideration (Act on Maternity/Paternity Leave and Parental Leave, No. 95/2000). As stated in the law, the main goals were to (1) ensure that children get to spend time with both parents and (2) to enable men and women to balance work and family life. Furthermore, even though it was not explicitly stated as a main goal, it was also mentioned that division of care for children by parents was a prerequisite for equality in the labor market.

The case of Iceland is quite unique, when comparing the country's parental leave laws to those of the other Nordic countries. First, paid parental leave has a long history in the other Nordic countries but laws were enacted much later in Iceland[5]. Furthermore, as can be seen from Table 1 and Figures 1 and 2, the trend in Iceland when it comes to parental leave in the last couple of years has also deviated quite from the other Nordic countries. For a long time, men accounted for almost none of the parental leave (their share was 0.1% in 1995), but after the reform in 2000 the growth in men's share of the total leave time has been quite steep. In 2000 their share was still fairly low (3.3%), but in 2001 when men had been granted an individual right to a one-month-long paternity leave, the percentage of men participating had reached 11.5%. In 2002 men had the right to a two-month-long paternity leave and accounted for 19.6% of all parental leave days used. In 2005, three years after men first got non-transferable right to a three-month-long paternity leave, this number had reached 32.7%. Since 2002, Icelandic men have used the largest share of total parental leave in the Nordic countries.

3.2   Icelandic households

There is little difference between cohabiting and married couples in the Nordic countries, both socially, culturally and legally, and as cohabitation is very common in all of them, including Iceland. At the time of the reform, 41% of individuals aged 25-40 were married while 21% were cohabiting.

According to OECD (2012b), Iceland has the highest share of children born out of wedlock[6] among the OECD countries, around 64%. This cannot be explained by high share of teenage pregnancies as the same report notes that Iceland is in the middle of the ranking distribution of OECD countries concerning this. Numbers from Statistics Iceland show that cohabitation is common among people that have children. In the years between 2001 and 2006, 57% of first born children and 50% of second borns were born to cohabiting parents while the respective numbers born to married parents were 19% of first born children and 39%.

Fertility rates are also high in Iceland relative to other developed countries, as can be seen in Figure

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[5]the first parental leave laws were enacted 1901 in Denmark, 1917 in Finland, 1892 in Norway, 1900 in Sweden but not until 1946 in Iceland

[6]Births out of wedlock are defines as the percentage of all children born to parents who are not married nor living in a legal partnership, occurring during that year

3, and divorces and unions' dissolutions are common.[7] In 2001, 32.7% of divorces and termination of cohabitations were among couples without children. Furthermore, most children are under the age of seven at the time of their parents' divorce or termination of their cohabitation. These numbers can be found in Tables 2 and 3.

Gender equality in Iceland is relatively high, and female labor market participation has remained close to 80% over the last decade. However, as most other western countries, Iceland has a considerable gender pay gap. It can be seen in Table 4 that women's total salary in the private sector was 80.2% of men's total salary in 2010, up from 63.2% in 1998.

4   Data

We use a very rich register-based panel data set comprising a sample of 600 Icelandic families who had children in the three months before and three months after the first change in the parental leave, i.e., between October 2000 and March 2001. The sample was drawn randomly from parents who were married or cohabiting and not unemployed or self-employed at the time when their child was born. This data covers about 30% of all childbirths in the country during this period.

The data stem from the Icelandic Longitudinal Income Database (ICELID), maintained by Statistics Iceland, which has gathered the data from different sources, mainly from administrative registers. Given that the data are collected by one central agency together with the fact that this data is used for tax purposes, we believe that our data set is of very high quality. Furthermore, as the data register based and concern a large representative sample, the results are not influenced by self-selection biases. The scope and quality of the data are therefore comparable to other studies using Scandinavian data such as Johansson (2010), Rege and Solli (2010), Cools et al. (2011), Kotsadam and Finseraas (2011), Kotsadam and Finseraas (2013) and Ekberg et al. (2013).

Icelandic individuals pay taxes on their income and for this reason, Statistics Iceland has a parliamentary mandate to collect extensive information on the finances of every individual in the country. We compiled data on income supplied by Statistics Iceland into a panel covering 21 years (1990-2010) on the parents in our our sample. The income data is supplemented by demographic characteristics over 4 years (2000-2003). Demographic information include age, gender, marital status, education, dummies for whether the individual lives in the capital city or in other urban areas, number of children in different age categories and spouse identifiers. The education variable specifies the highest level of completed education, i.e., whether the individual has finished compulsory education, high school or has a university degree. Income is reported by individual source and is divided into three categories, income from employment, capital income and other income. The earnings measure of interest to us income from employment.

Table 5 provides summary statistics on the variables we use in this study. We show statistics for men, women and families separately.

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[7]The probability of a married person divorcing in 2000, just before the reform, was 40% according to Statistics Iceland. In 2011, this number was 34%.

5 Identification Approach

The method employed in this paper is a Difference-in-Difference (DD) estimation which is an increasingly popular way to estimate causal relationships. The DD estimation consists of identifying a specific intervention or treatment and comparing the difference in outcomes before and after the intervention for groups affected by the intervention to the same difference for unaffected groups. This is an appropriate method for evaluating causal effect of interventions that are as good as random as in the setting of this paper. The attractiveness of DD estimation comes from its simplicity as well as its potential to circumvent many of the endogeneity problems that typically arise when making comparisons between heterogeneous individuals. In this section we will lay out the estimation method in this setting and discuss its limitations and potentials threats to identification.

5.1 Difference-in-difference estimation

In the empirical analysis we consider several outcome variables: marital stability, i.e., divorces, female earnings, male earnings, the gender wage gap and the wage gap among couples. The outcome variable for individual i at time t is denoted Y_{it}. Throughout, we employ the DD estimation strategy laid out in this section.

When evaluating the effects of the paternity leave we distinguish between those individuals who had a child just before and just after the reform of the parental leave scheme in 2001. We let $T = 1$ for those individuals who had a child in January-March 2001 and $T = 0$ for the remaining individuals in our sample, i.e., those who had children in October-December 2000. We are interested in estimating the average effect on each outcome variable for parents where the father was entitled to paternity leave:

$$E[Y_{1i} - Y_{0i}|T = 1], \tag{1}$$

where Y_{1i}^1 is the outcome of parent i when the family was entitled to paternity leave and Y_{0i}^0 is the outcome of parent i if the family was not entitled to paternity leave. Since a parent's outcome cannot be observed both when the family is entitled to paternity leave and not, the main challenge when attempting to evaluate this effect is the construction of counterfactuals.

The simple DD estimator compares the change in the outcome variable for a parent where the father is entitled to paternity leave with the change in the outcome variable for a parent where the father is not entitled to paternity leave. The implicit identifying assumption is that if the reform of the parental leave scheme, the change in the outcome variable would have been the same for both groups of parents, i.e, formally

$$E[Y_{0i} - Y_{0i}|T = 1] = E[Y_{0i} - Y_{0i}|T = 0], \tag{2}$$

this cannot be tested directly though as Y_{0i} is unobserved for $T = 1$. However, the credibility of this assumption can be established by testing whether there are any group-specific trends prior to the reform.

The unconditional DD estimator is then calculated as:

$$E[Y_{1i} - Y_{0i}|T = 1] - E[Y_{0i} - Y_{0i}|T = 0], \tag{3}$$

We will also control for additional background variables using a regression framework to generalize specification (3). Let $reform = \mathbb{I}(t > 2000)$ denote the indicator of whether the observation is after the paternity leave reform. The DD estimator of the effect of the paternity leave is the estimated coefficient γ_{DD} to $reform \times T$ in the following OLS regression of the outcome variables Y_i on T, $reform \times T$ and various control variables

$$Y_{it} = \gamma_0 + \gamma_1 T + \gamma_{DD}[reform \times T] + X_{it}\delta + \epsilon_{it}, \tag{4}$$

where X_{it} is the vector of additional control variables, and $\epsilon_{it} \sim N(0, \sigma^2)$ is the unobserved idiosyncratic variation in outcomes across individuals and treatment group. One concern is that some of this variation is common to individuals that had children in the same period, i.e., $\epsilon_{it} = u_t + \varepsilon_{it}$. In order to confront the inference problem arising in the case of childbirth-period specific random effects u_t, we present two kinds of standard errors. First, we assume that ϵ_{it} are i.i.d., in which case OLS standard errors provide valid inference. Second, assuming errors are independent across childbirth-period groups and thus clustering standard errors by childbirth-period renders our inferences valid.[8] Furthermore, it is reasonable to expect that the error terms for parents with the same level of education are not independent. We have therefore also chosen to provide results where we cluster our standard errors by education and month of birth of the child.

5.2   Threats to identification

There is a trade-off between having as similar groups as possible (obtained by reducing time window around the reform) and a larger sample size (using a large window around the reform). We therefore report our findings for several time windows, i.e., report results for families who had children one, two and three months before and after the reform.

A potential threat to the identification of causal effects is endogenous sorting, i.e., parents may have planned the time of birth in anticipation of the policy. According to the Directorate of Health, births in Iceland have a standard deviation of 12 days, i.e., within a 12 day window the timing of birth is completely random and cannot bias the treatment effect. Unfortunately, our data do not allow a proper test of endogenous sorting since we do not have that detailed information on date of birth, and given the size of the Icelandic population our sample size would be extremely small even if we had the information and would only use a 12 day window. Instead we examine the number of children born in Iceland and find no spike at the month or year of the implementation of the paternity leave. This can be seen in Figure 4.

It can also be argued that endogenous sorting should not be a problem as the policy process was quite fast. The new bill on parental leave was passed by the Parliament on May 9th 2000 and came into effect on January 1st 2001, parents who gave birth around the time of the reform threshold could therefore not have known about the reform at the time of conception. More specifically, children conceived on the day that the bill was passed were born mid-February 2001. Given the standard deviation of gestational age we can be sure that results obtained using a two month window around the reform were not contaminated by endogenous sorting.

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[8]Even though clustering by treatment group should provide valid inference in the case of serial correlation we do not allow for arbitrary correlations within treatment groups clustering by treatment. The problem that arises is that we only have two clusters then and valid inference requires a larger number of clusters Angrist and Pischke (2008).

Furthermore, it is evident from news coverage that the passage of the new law did not reach public awareness until in the fall 2000. This implies that the usage of a parents of children born during the first three months of 2001 as our treatment group due to endogenous sorting of individuals into parenthood in March 2001.

However, as we cannot be certain that endogenous sorting is not affecting our results when using a three month window we need to compare our treatment and control groups. In order to know whether the parents in the two groups resemble each other on potentially confounding variables, we compare the mean values of these variables for the two groups of parents in Table 5. This shows that the sample selection was successful in minimizing the effects of other confounding factors. The fact that the treatment and control groups do not differ on any observable characteristics other than education further indicates that endogenous sorting is unlikely to be a problem.

6   Results

The first change in the parental leave system took place on January 1st 2001, when the total leave was extended from 6 months to 7, with one of the seven months earmarked to the father. The following section details our results, using a sample of 1,200 births in the three months before and three months after this cutoff date.

6.1   Graphical Illustrations

Figure 5 shows the evolution of male and female earnings for those that had a child within a three month time window around the parental leave reform in 2001. Among those that had a child during this period, the one's that had a child after January 1st 2001 were entitled to paternity leave while those who had a child before were not. There are some noteworthy patterns. For all groups , the earnings are increasing over time. The reason behind this is that wages increased a lot during this period and also that earnings increase with age.

The main identification assumption behind our method of estimation is that parents who had a child where the father was entitled to paternity leave are no different from parents where the father was not. In case there had not been any reform, these two groups had behaved the same. This assumption cannot be tested but we can get a sense of its credibility by comparing the dynamics of the couples who were and were not entitled to a paternity leave prior to the reform. These trends are almost identical, indicating that parents where an additional month of parental leave was earmarked to fathers do not behave differently from parents where this did not happen. In other words, the common trends identifying assumption looks reasonable.

Figure 5 also provides a graphical illustration of the difference-in-difference estimator of the effect of the introduction of paternity leave on the earnings of mothers and fathers. The graph suggests that the reform had a short term effect on the earnings of mothers but no effect on the earnings of fathers.

What is more striking is that the gender wage gap increases by a lot over time. Part of this can be explained by the fact that wages increased more in male dominant industries.[9] We therefore also want to look at at how the earnings gap between spouses has evolved over time and this can be seen in Figure 6. This shows the evolution for three groups of couples. The average gap increases considerably

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[9]see, e.g., Iceland (2010) and Bjarnadóttir and Árnadóttir (2011).

less for couples where women have positive earnings and if we exclude those couples where the male partners are at the top of the earnings distribution.[10]

This makes it clear that if we include those couples where the male partners are at the top of the earnings distribution, these observations would most likely be driving our findings. We therefore exclude those from our analysis. One could also argue that the group of interest to us is rather "normal" couples where the earnings of both partners has some meaning for the household budget. This is certainly not the case in households where one partner earns one hundred times what the other does.

Figure 7 provides a graphical illustration of the DD estimator of the effect of the introduction of paternity leave on the earnings gap of couples where the female partner has positive earnings and the male partner earns no more than ten times what the female partner does. The graph suggests that the reform was successful in reducing the earnings gap between couples. More specifically, the earnings gap increased much less during the years of pregnancy and birth for those parents who had a child just after the reform and were therefore entitled to paternity leave than for those who had a child just before the reform and did not get the opportunity to add one month of paternity leave to the six months of parental leave that all parents were entitled to.

These graphical illustrations have provide an informal way to get a feeling for whether the introduction of one month of paternity leave on top of three month maternity leave and three month parental leave had an effect on the earnings dynamics of couples. It should be kept in mind though that the graphs in a DD design are only meant to portray a relationship that might exist between an outcome and a treatment. It is just a simple way to visualize the identification strategy of this estimation approach. A quick look at the graphs allows one to answer the question whether or not there was a shift in the outcome at the point in time when the reform was carried through for those affected by the reform but not for those who were not affected or if there was a change in trend for the former group but not for the latter. The graphs are therefore good at answering whether there is a a treatment effect while formal statistical methods need to be used to obtain estimates of the treatment effect.

6.2 The Effect on Earnings

We did investigate the effects of the introduction of the paternity leave on earnings of mothers and fathers. Although the effect was as expected, i.e., negative for fathers' earnings and positive for mothers' earnings, none of our estimates were statistically significant. These results can be found in Table 6.

Given the documented assortative mating taking place in marriage markets, the earnings gap between couples is not uniform. Furthermore household outcomes are rather affected by the gap in earnings between the spouses than by the general gap in earnings between men and women. It is therefore more relevant to investigate the earnings gap between spouses rather than the earnings of men and women in general.

When we consider all couples who had a child around the paternity leave we find that the introduction of the paternity leave decreased the earnings gap between couples but this effect is not significant. However, it can be argued that the focus should be on couples where there is actually an earnings gap

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[10]We do not have to do the same for female partners as there are simply no real female outliers.

as the goal of the reform was to decrease the edge that males currently enjoy. This edge is obvious in our data, 540 out of 594 households in our treatment sample had a positive earnings gap and 518 out of 596 in our control sample. These were the households that the reform was aimed at and should therefore be at the center of our attention.

Table 7 presents the DID estimates of the paternity leave reform on the change in earnings gap between couples that suffered from positive earnings gap. We find that the introduction of the paternity leave decreased the earnings gap between couples where male spouse enjoyed an earnings advantage over their partner. A DID estimator of -0.198 using a three month window implies that the earnings gap between couples was closed by 19.8% due to the couples being entitled to a paternity leave.

Our results do not imply that the reform did not have any effect of general male and female earnings dynamics. The estimates go in the directions expected and the fact that we do not find statistically significant effect on male and female earnings and the general gender wage gap could very well be that the small sample size is masking an effect.

6.3   The Effect on Marital Stability

In Table 8, we present our results on the estimated effect of the introduction of the paternity leave on marital stability. More specifically, we look at the probability that both parents are present in the household in 2003, depending on whether their child was born right before or right after the law change. The main conclusion here is that parents that had the opportunity to add one month of paternity leave to the 6 month parental leave were significantly less likely to be separated two years later.

To be more precise, our estimates imply that the odds of staying together increase when the family is entitled to paternity leave. If the couple is entitled to a paternity leave, the odds ratio would be decreased by 0.38.

Our inference is not sensitive to adding more control variables and whether based upon OLS or clustered standard errors. However, shrinking the window around the reform reduces the significance of our results when we use OLS standard errors as the sample size becomes smaller.

The estimates can be compared to the overall unconditional mean of the couples in our sample that have divorced in 2003. We have 562 families in our sample that had a child either just before or just after the paternity leave reform in 2001. Out of those, 283 families were entitles to paternity leave while 279 were not. The total share of couples in our sample that had divorced in 2003 was 6.2%, 4.1% of those treated and 8.2% of those in the control group. The odds of those who were not entitled to parental leave of having divorced in 2003 are therefore 0.089 while the odds for the treated parents are 0.044, so the difference is 51%. Our estimates imply therefore that the odds of a divorce in the control group would have been 0.039 in case they had gotten the opportunity to add one month of parental leave to the 6 month maternity leave.

Our results therefore imply that if the parents of those children that were born just before the reform would have had the opportunity to add one month of paternity leave to the 6 month parental leave, the number of families in the sample that had been split in 2003 had been reduced from 23 to 10. The introduction of parental leave therefore promotes marital stability and thereby has a life determining impact not only on the parents but also on the children involved who are now more likely to grow up with both parents around.

7 Robustness Checks

We are waiting for additional data to run placebo regressions where the initial regressions are repeated on a treatment and a control groups unrelated to any actual policy change and where the two groups have equal regulations regarding parental leave. More specifically, we replicate our regressions as if the reform had taken place exactly one year earlier. No statistically significant treatment effect boost the credibility of our findings and verify that they can be interpreted as true causal effects of entitling families paternity leave.

8 Conclusions

In this paper we find that adding one month of paternity leave to the existing 6 month parental leave in Iceland, significantly decreased divorce rates in our sample. Parents who had their children right after the policy form were much more likely to be divorced two years after their child was born, than parents who had their child just before the paternity leave was introduced. Moreover, there was a significant effect on couple's earnings gap, where the gap decreased by 19.8 % due to parents being entitled to paternity leave.

Parental policy has been under debate in recent years, and there is little agreement on the optimal system in terms of length, form or payments. While lengthened maternity leaves have been found to increase women's labor market participation, it has also been found to have negative effect on earnings of women (Ruhm, 1998) while other papers suggest that this only holds in the short run (Lalive and Zweimüller, 2009; Lalive et al., 2013). In response to this evidence and in an attempt to decrease the gender gap in the labor market and increase gender equality within, a few countries have earmarked part of their parental leave to fathers. Parents must therefore forgo this parental leave if not used by the father, creating strong economic incentives for fathers to take part in caring for their children during their first months. However, few attempts have been made so far to evaluate how well this policy works. The results presented here, indicate that specific paternity leave can be effective, not only in closing the gender wage gap but also has a positive effect on marital stability.

The policy reform effectively encouraged men to take at least one month of the seven month long parental leave, and thus equalized the domestic childcare responsibility. While economists have long viewed marriage as a production arrangement, where increased specialization would boost the gains from marriage and thus decrease the probability of divorce, there is recent evidence that preferences may have shifted towards more hedonic relationships based on egalitarian beliefs and preferences. The results presented in this study, suggest that providing opportunities and incentives for fathers to participate more actively in taking care of their young children can have a stabilizing effect on relationships. This is also in line with recent findings showing that men like child care at least as much as women do (Connelly and Kimmel, 2013). Furthermore it added one month to the parental leave, which possibly decreased the stress and strains that can be experienced by new parents.

It is likely that the large effect on marital stability, found in this study, is partly due to the high level of gender equality already in place in the Scandinavian countries. There is a handful of evidence that preferences are shifting towards greater equality. The trend in most developed countries has been towards higher levels of female education, higher female labor market participation and less gender gap in earnings. In the U.S., findings show that the reason why women spend more time on taking

care of their own children than men is not because they enjoy it more (Connelly and Kimmel, 2013). This implies that gender labor market gap concerns cannot rightfully be defended based on gendered preferences for rearing of own children. Furthermore, more equal sharing of childcare among couples would not be Pareto inefficient in as fathers draw as much utility from taking care of their children as mothers. Our results show therefore imply that economic incentives for fathers to take care of their children during their first months is successful in reducing the earnings gap between couples without decreasing total household utility from parenting.

Divorce rates have been high since early 1960's and the psychological cost of divorce for children as well as the economic cost to society is well documented. While there a few papers that are successful in identifying the causes of increased marital instability, it is all but straightforward to implement a policy based on these findings. For example Dahl and Moretti (2008) find that the probability of divorce is higher when the first born child is daughter than when it is a son, and Bertrand et al. (2013) find that couples are more likely to divorce when women earn more than their husbands. In contrast, the policy implications from this paper are quite clear, as it evaluates a law reform that, while more aimed at gender equality at home and in the labor market, successfully and substantially decreased divorce rates among parents of new born children.

References

Angrist, Joshua D. and Jorn-Steffen Pischke, *Mostly Harmless Econometrics: An Empiricist's Companion*, 1 ed., Princeton University Press, December 2008.

Becker, Gary S., *A Treatise on the Family*, enlarged edition ed., Cambridge, Mass.: Harvard University Press, 1991.

_ , **Elisabeth M. Landes, and Robert T. Michael**, "An Economic Analysis of Marital Instability.," *Journal of Political Economy*, 1977, *85* (6), 1141.

Bertrand, Marianne, Claudia Goldin, and Lawrence F. Katz, "Dynamics of the Gender Gap for Young Professionals in the Financial and Corporate Sectors," *American Economic Journal: Applied Economics*, September 2010, *2* (3), 228–55.

_ , **Jessica Pan, and Emir Kamenica**, "Gender Identity and Relative Income within Households," Working Paper 19023, National Bureau of Economic Research May 2013.

Bjarnadóttir, Eva and Eygló Árnadóttir, "Konur í kreppu? Samantekt á opinberum tölulegum gögnum á áhrifum efnahagshrunsins á velferd kvenna," Technical Report, Ministry of Welfare 2011.

Bramlett, Matthew D and William D Mosher, "Cohabitation, marriage, divorce, and remarriage in the United States.," *Vital Health Stat 23*, Jul 2002, (22), 1–93.

Brines, Julie and Kara Joyner, "The Ties That Bind: Principles of Cohesion in Cohabitation and Marriage," *American Sociological Review*, 1999, *64* (3), pp. 333–355.

Carneiro, Pedro, Katrine Vellesen Loken, and Kjell G. Salvanes, "A Flying Start? Maternity Leave Benefits and Long Run Outcomes of Children," IZA Discussion Papers 5793, Institute for the Study of Labor (IZA) June 2011.

Connelly, Rachel and Jean Kimmel, "If You're Happy and You Know It, Clap Your Hands: How Do Mothers and Fathers Really Feel about Child Caregiving?," IZA Discussion Papers 7531, Institute for the Study of Labor (IZA) July 2013.

Cools, Sara, Jon H. Fiva, and Lars J. Kirkebøen, "Causal Effects of Paternity Leave on Children and Parents," CESifo Working Paper Series 3513, CESifo Group Munich 2011.

Dahl, Gordon B. and Enrico Moretti, "The Demand for Sons," *Review of Economic Studies*, 2008, *75* (4), 1085–1120.

Ekberg, John, Rickard Eriksson, and Guido Friebel, "Parental leave — A policy evaluation of the Swedish "Daddy-Month" reform," *Journal of Public Economics*, 2013, *97* (C), 131–143.

Heckert, Alex D., Thomas C. Novak, and Kay A. Snyder, "The Impact of Husbands' and Wives' Relative Earnings on Marital Dissolution," *Journal of Marriage and Family*, August 1998, *60* (3), 690–703.

Iceland, Statistics, "Launamunur kynjannan," Technical Report, Statistics Iceland - Wages, income and education department 2010.

Jalovaara, Marika, "The joint effects of marriage partners' socioeconomic positions on the risk of divorce," *Demography*, 2003, *40* (1), 67–81.

Johansson, Elly-Ann, "The effect of own and spousal parental leave on earnings," Working Paper Series 2010:4, IFAU - Institute for Evaluation of Labour Market and Education Policy March 2010.

Kotsadam, Andreas and Henning Finseraas, "The state intervenes in the battle of the sexes: Causal effects of paternity leave," *Social Science Research*, 2011, *40* (6), 1611 – 1622.

_ **and** _ , "Causal Effects of Parental Leave on Adolescents' Household Work," *Social Forces*, 2013.

Lalive, Rafael, Analia Schlosser, Andreas Steinhauer, and Josef Zweimüller, "Parental Leave and Mothers' Careers: The Relative Importance of Job Protection and Cash Benefits," *Review of Economic Studies*, 2013, *In press.*

_ **and Josef Zweimüller**, "How does parental leave affect fertility and return to work? Evidence from two natural experiments," *Quarterly Journal of Economics*, 2009, *124* (3), 1363 – 1402.

Liu, Guiping and Andres Vikat, "Does divorce risk depend on spousesÂť relative income? A register-based study of first marriages in Sweden in 1981–1998," MPIDR Working Papers WP-2004-010, Max Planck Institute for Demographic Research, Rostock, Germany 2004.

NOSOSCO, "Social Protection in the Nordic Countries 2002. Scope, expenditure and financing," Technical Report 24:04, Nordic Social-Statistical Committee (NOSOSCO) 2004.

_ , "Social Protection in the Nordic Countries 2004. Scope, expenditure and financing," Technical Report 27:06, Nordic Social-Statistical Committee (NOSOSCO) 2006.

_ , "Social Protection in the Nordic Countries 2005. Scope, expenditure and financing," Technical Report 30:07, Nordic Social-Statistical Committee (NOSOSCO) 2007.

OECD, *Closing the Gender Gap*, OECD Publishing, 2012.

_ , "Share of births out of wedlock and teenage births," Technical Report, OECD February 2012.

Oppenheimer, Valerie Kincade, "Women's Rising Employment and the Future of the Family in Industrial Societies," *Population and Development Review*, 1994, *20* (2), pp. 293–342.

_ , "Women's Employment and the Gain to Marriage: The Specialization and Trading Model," *Annual Review of Sociology*, 1997, *23* (1), 431–453. PMID: 12348280.

Rege, Mari and Ingebor F Solli, "The impact of paternity leave on long-term father involvement," UiS Working Papers in Economics and Finance 2010/4, University of Stavanger July 2010.

Ruhm, Christopher J., "The Economic Consequences of Parental Leave Mandates: Lessons from Europe," *The Quarterly Journal of Economics*, 1998, *113* (1), 285–317.

Sayer, Liana C. and Suzanne M. Bianchi, "Women's Economic Independence and the Probability of Divorce: A Review and Reexamination," *Journal of Family Issues*, 2000, *21* (7), 906–943.

Sayer, Liana C, Paula England, Paul D Allison, and Nicole Kangas, "She left, he left: how employment and satisfaction affect women's and men's decisions to leave marriages.," *AJS*, May 2011, *116* (6), 1982–2018.

Schoen, Robert, Stacy J. Rogers, and Paul R. Amato, "Wives' Employment and Spouses' Marital Happiness: Assessing the Direction of Influence Using Longitudinal Couple Data," *Journal of Family Issues*, 2006, *27* (4), 506–528.

Sigle-Rushton, Wendy, "Men's Unpaid Work and Divorce: Reassessing Specialization and Trade in British Families," *Feminist Economics*, 2010, *16* (2), 1–26.

Svarer, Michael and Mette Verner, "Do children stabilize relationships in Denmark?," *Journal of Population Economics*, 2008, *21* (2), 395–417.

Table 1: Number of people receiving benefits on the basis of pregnancy, birth or adoption in 1995-2005

	Denmark	Finland	Iceland	Norway	Sweden
			Men		
1995	41 003	40 267	10	25 166	130 786
2000	45 559	42 294	1 421	33 806	166 661
2001	45 372	43 590	2 840	35 096	186 177
2002	44 897	44 624	3 816	34 505	210 000
2004	46 447	46 947	5 625	36 214	242 572
2005	47 158	47 554	5 871	36 811	251 629
			Women		
1995	90 335	108 429	5 066	76 088	327 846
2000	82 657	97 359	5 097	80 368	275 214
2001	81 440	96 135	5 861	79 835	280 856
2002	79 481	95 277	6 266	78 703	295 000
2004	100 459	98 404	6 608	81 408	318 480
2005	100 915	99 067	6 587	80 894	325 774
		Share of men in relation to women			
1995	45%	37%	0%	33%	40%
2000	55%	43%	28%	42%	61%
2001	56%	45%	48%	44%	66%
2002	56%	47%	61%	44%	71%
2004	46%	48%	85%	44%	76%
2005	47%	48%	89%	46%	77%

Source: NOSOSCO (2004), NOSOSCO (2006), NOSOSCO (2007). The book Social Protection in the Nordic Countries (NOSOSCO), published every year, contains information about the number of men and women who utilize their right to parental leave to some extent.
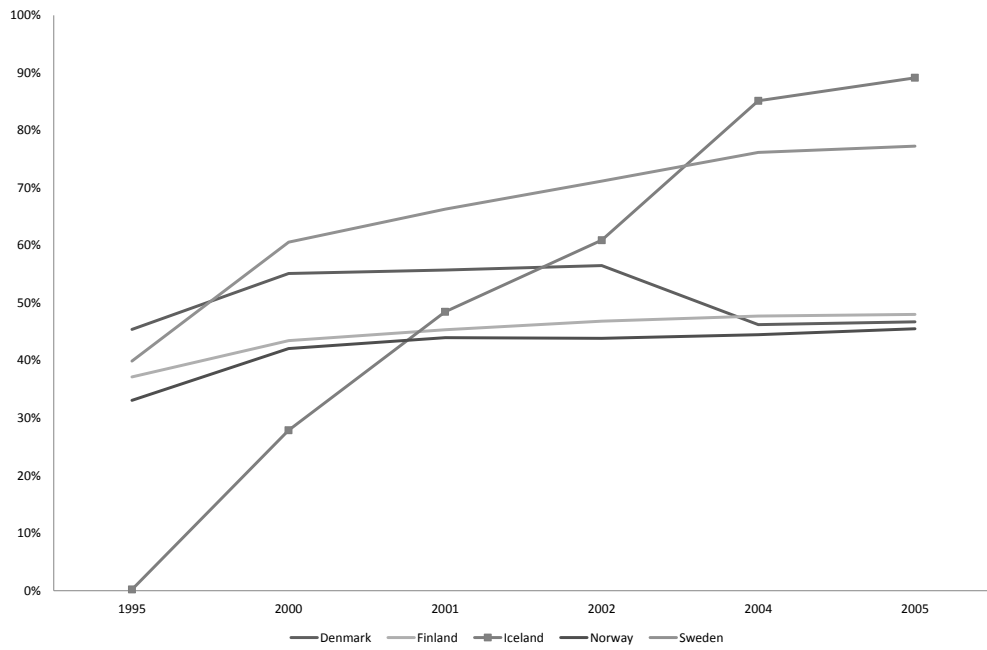
Figure 1: Number of people receiving parental leave in the Nordic countries, share of men relative to women
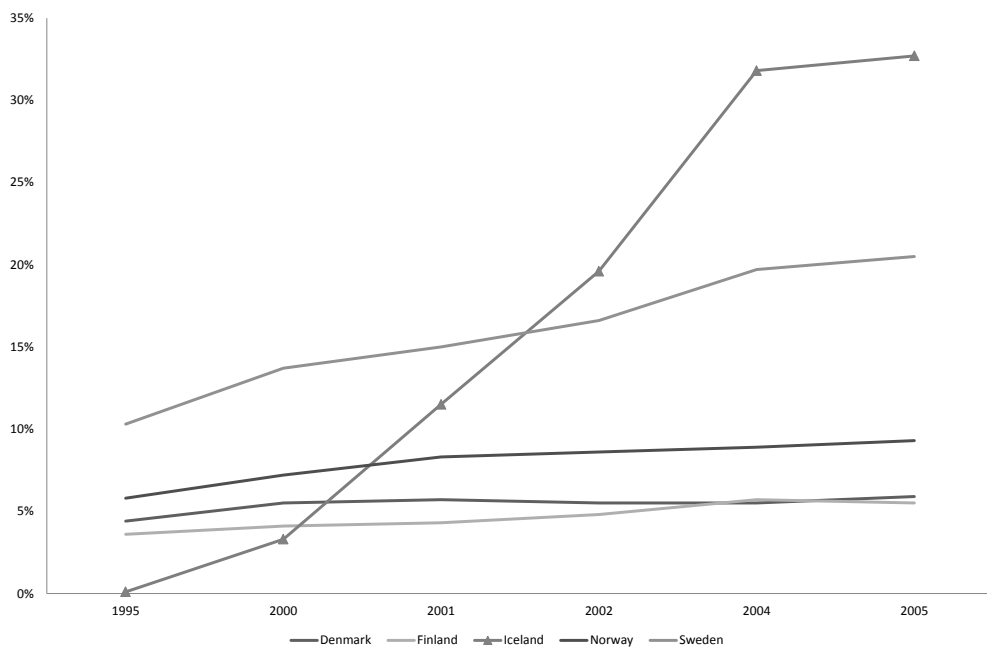
Figure 2: Share of parental leave days used by men in the Nordic countries

Figure 3: Fertility in Iceland 1990-2010
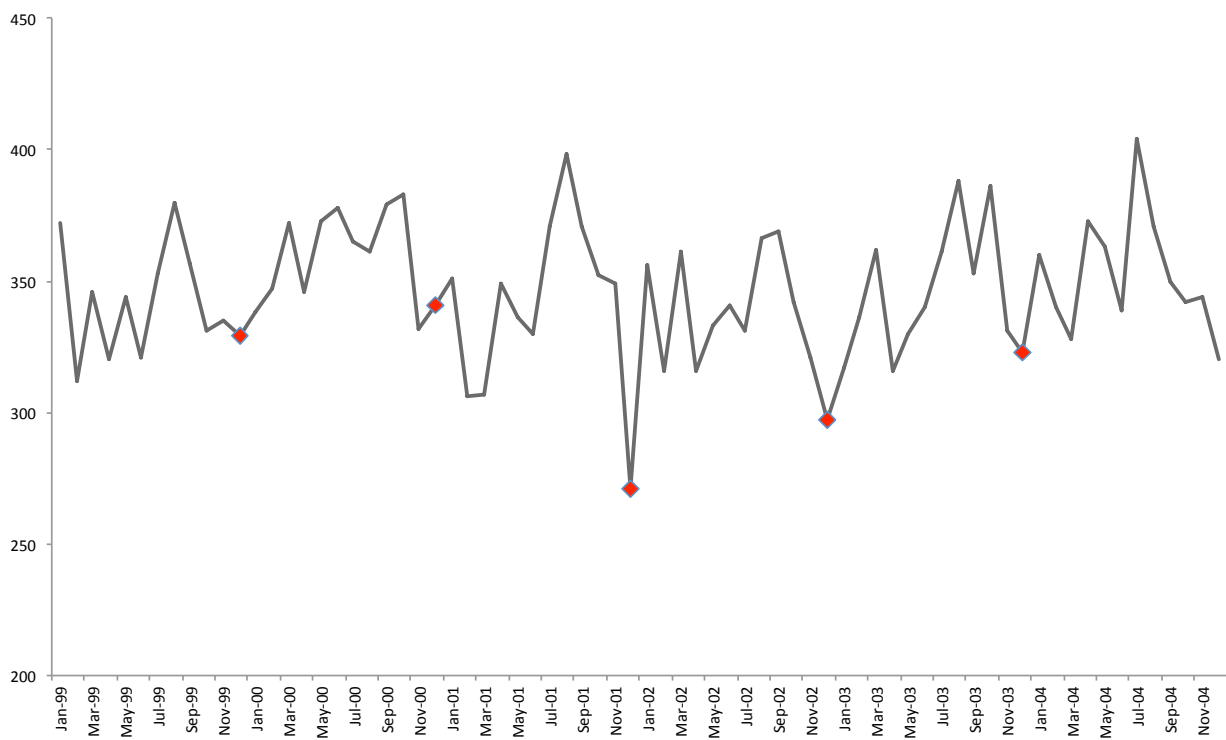
Figure 4: Monthly fertility in Iceland 1999-2004

20

Table 2: Divorces, dissolutions of consensual unions and number of children 1991-2011

	Couples without children	1 child	2 children	3 children	4 children or more
1991	32.3%	44.1%	17.4%	5.2%	1.0%
1992	35.5%	39.0%	19.7%	5.2%	0.6%
1993	37.7%	38.7%	17.3%	5.6%	0.7%
1994	35.6%	39.5%	20.5%	3.3%	1.1%
1995	36.7%	39.4%	17.1%	5.9%	1.0%
1996	37.7%	38.5%	18.4%	4.6%	0.8%
1997	37.6%	38.8%	18.2%	4.2%	1.3%
1998	36.5%	38.4%	19.3%	5.2%	0.7%
1999	37.6%	37.8%	18.7%	5.0%	0.9%
2000	35.3%	36.7%	21.0%	6.0%	1.0%
2001	32.7%	38.0%	22.0%	6.2%	1.1%
2002	36.2%	35.8%	21.1%	5.5%	1.4%
2003	37.4%	34.1%	22.4%	5.2%	0.8%
2004	39.9%	30.7%	22.2%	6.2%	1.0%
2005	41.0%	31.5%	19.7%	6.6%	1.2%
2006	37.5%	32.8%	22.5%	6.4%	0.8%
2007	38.6%	30.8%	21.6%	7.0%	1.1%
2008	35.1%	35.7%	22.4%	5.2%	0.7%
2009	39.9%	32.3%	20.7%	6.1%	1.0%
2010	35.9%	35.0%	22.8%	5.6%	0.8%
2011	38.1%	34.5%	21.4%	5.0%	0.9%

* Divorces and dissolutions of consensual unions by the number of children in the household.

Table 3: Age of children at the time of divorce or dissolution of consensual unions

	<1	1	2	3	4	5	6	7	>7
1994	9.9%	13.2%	8.6%	7.2%	6.9%	6.4%	5.8%	5.9%	36.1%
1995	10.3%	13.6%	9.3%	9.0%	7.3%	7.8%	5.5%	5.1%	32.1%
1996	8.7%	11.3%	9.1%	9.7%	7.7%	7.5%	6.7%	5.5%	33.8%
1997	9.7%	11.5%	10.7%	9.7%	7.9%	7.0%	6.7%	4.9%	31.9%
1998	9.8%	13.2%	9.9%	8.1%	8.5%	6.7%	6.5%	6.0%	31.3%
1999	8.2%	11.8%	9.6%	8.7%	9.1%	6.3%	7.0%	4.7%	34.7%
2000	8.8%	11.0%	10.5%	8.2%	7.1%	5.7%	6.2%	6.1%	36.4%
2001	9.7%	11.6%	9.4%	7.3%	7.3%	6.3%	4.9%	5.2%	38.4%
2002	7.9%	9.8%	9.0%	9.8%	6.7%	5.8%	6.0%	6.9%	38.2%
2003	6.8%	10.9%	8.6%	8.2%	7.4%	6.1%	6.0%	6.7%	39.3%
2004	6.4%	9.9%	9.4%	6.7%	7.4%	6.3%	4.8%	5.5%	43.7%
2005	4.5%	7.9%	9.3%	7.4%	7.0%	7.0%	6.5%	5.2%	45.2%
2006	5.3%	8.7%	9.6%	8.6%	6.5%	6.7%	5.8%	5.3%	43.5%
2007	5.5%	9.9%	9.0%	7.0%	7.4%	6.8%	5.6%	6.3%	42.6%
2008	7.2%	8.9%	8.1%	8.7%	6.1%	7.5%	5.2%	6.8%	41.5%
2009	7.9%	8.9%	9.7%	7.1%	7.1%	6.2%	5.0%	4.9%	43.3%
2010	4.9%	9.1%	8.4%	9.0%	6.9%	6.2%	6.1%	5.9%	43.4%
2011	6.3%	11.2%	8.0%	10.0%	6.7%	6.5%	5.8%	5.4%	40.0%

* Divorces and dissolutions of consensual unions by the age of children in the household.

Table 4: Women's earnings as a percentage of men's earnings in the private sector for full-time employees 1998-2010

	Total salaries	Total salaries considering working hours*
1998	63.18%	69.27%
1999	64.53%	69.86%
2000	65.10%	69.62%
2001	66.43%	70.61%
2002	67.93%	72.10%
2003	68.51%	73.69%
2004	68.79%	74.29%
2005	70.42%	76.56%
2006	70.28%	77.81%
2007	71.24%	78.57%
2008	72.69%	80.75%
2009	78.85%	84.01%
2010	80.17%	85.40%

* Number of working hours has been factored into the equation by dividing total salary by the average number of working hours.

Table 5: Summary Statistics

|	Treatment group		Control group		Difference	
	Men	Women	Men	Women	Men	Women
Individual characteristics:						
Birth year	1968.3	1970.1	1968.0	1970.6	0.3	0.5
Education	1.46	1.42	1.49	1.38	0.03	0.04
Elementary school	0.20	0.21	0.18	0.15	0.02	0.04
High school	0.30	0.18	0.30	0.15	0.00	0.03
University	0.22	0.26	0.23	0.29	-0.01	-0.03
No education or missing	0.28	0.32	0.28	0.38	0.00	0.06
Earnings 1999	2,553,455	1,258,256	2,595,392	1,200,532	-41,937	57,724
Earnings 2000	2,935,226	1,461,176	3,078,061	1,291,401	-142,835	169,775
Earnings 2001	3,464,125	1,169,254	3,395,441	826,124	68,684	343,130
Earnings 2002	3,607,605	1,366,135	3,667,968	1,389,825	60,363	-23,690
Earnings 2003	3,832,369	1,673,427	3,904,121	1,635,063	-71,752	38,364
Capital income 1999	110,539	85,433	96,845	63,337	13,694	22,097
Household characteristics:						
Couple's earnings gap 1999	1,249,988	1,249,988	1,431,684	1,431,6843	-181,696	-181,696
Couple's earnings gap 2000	1,479,941	1,479,941	1,786,660	1,786,660	-306,719	-306,719
Couple's earnings gap 2001	2,294,871	2,294,871	2,557,223	2,557,223	-262,352	-262,352
Couple's earnings gap 2002	2,241,470	2,241,470	2,265,624	2,265,624	-24,154	-24,154
Couple's earnings gap 2003	2,164,172	2,164,172	2,240,831	2,240,831	-76,159	-76,159
Couple's earnings gap 2004	2,183,962	2,183,962	2,315,868	2,315,868	-131,906	-131,906
Couple's earnings gap 2005	2,668,966	2,668,966	2,542,816	2,542,816	126,150	126,150
Couple's earnings gap 2006	3,069,257	3,069,257	2,731,151	2,731,151	338,106	338,106
Urban dummy	0.86	0.86	0.85	0.85	0.01	0.01
#children < 7	1.51	1.51	1.55	1.55	-0.04	-0.04
#children > 7	0.39	0.39	0.36	0.36	0.03	0.03
First child dummy	0.38	0.38	0.37	0.37	0.01	0.01
Together 2002	0.98	0.99	0.94	0.95	0.05	0.04
Together 2003	0.96	0.96	0.91	0.91	0.05	0.05
#observations	297	297	298	298	-1	-1
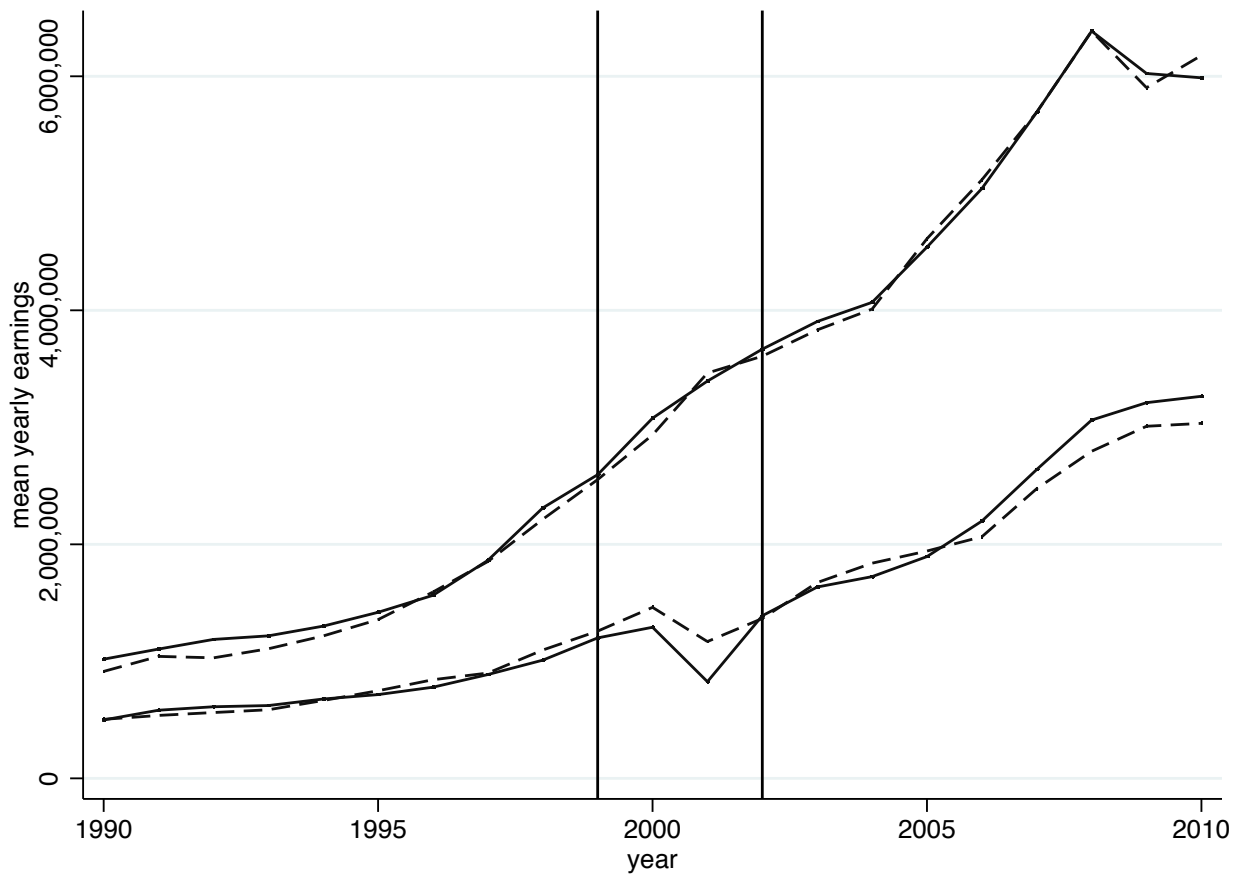
Figure 5: Earnings for treated and untreated parents. The solid line represents treated individuals, i.e., those whose family was entitled to paternity leave and the dashed line untreated individuals. The lines above are for males and the lines below for females.
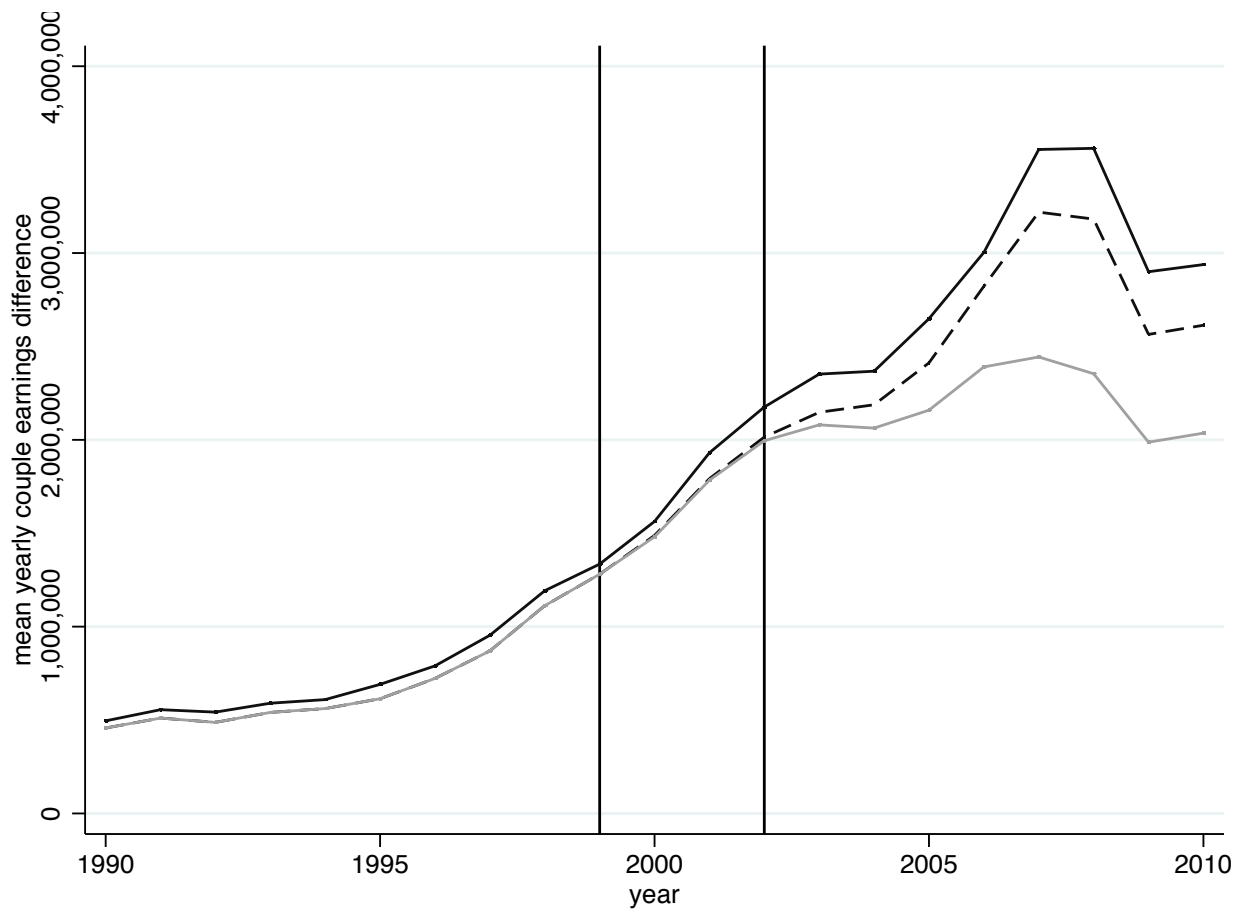
Figure 6: Earnings gap for couples (measured in millions of ISK). The solid line at the top is the difference for all couples. The dashed line in the middle is the difference for those couples where the female has positive earnings. The solid line at the bottom is the difference for couples where the female has positive earnings and where the earnings difference is below 15,000,000 ISK every year.
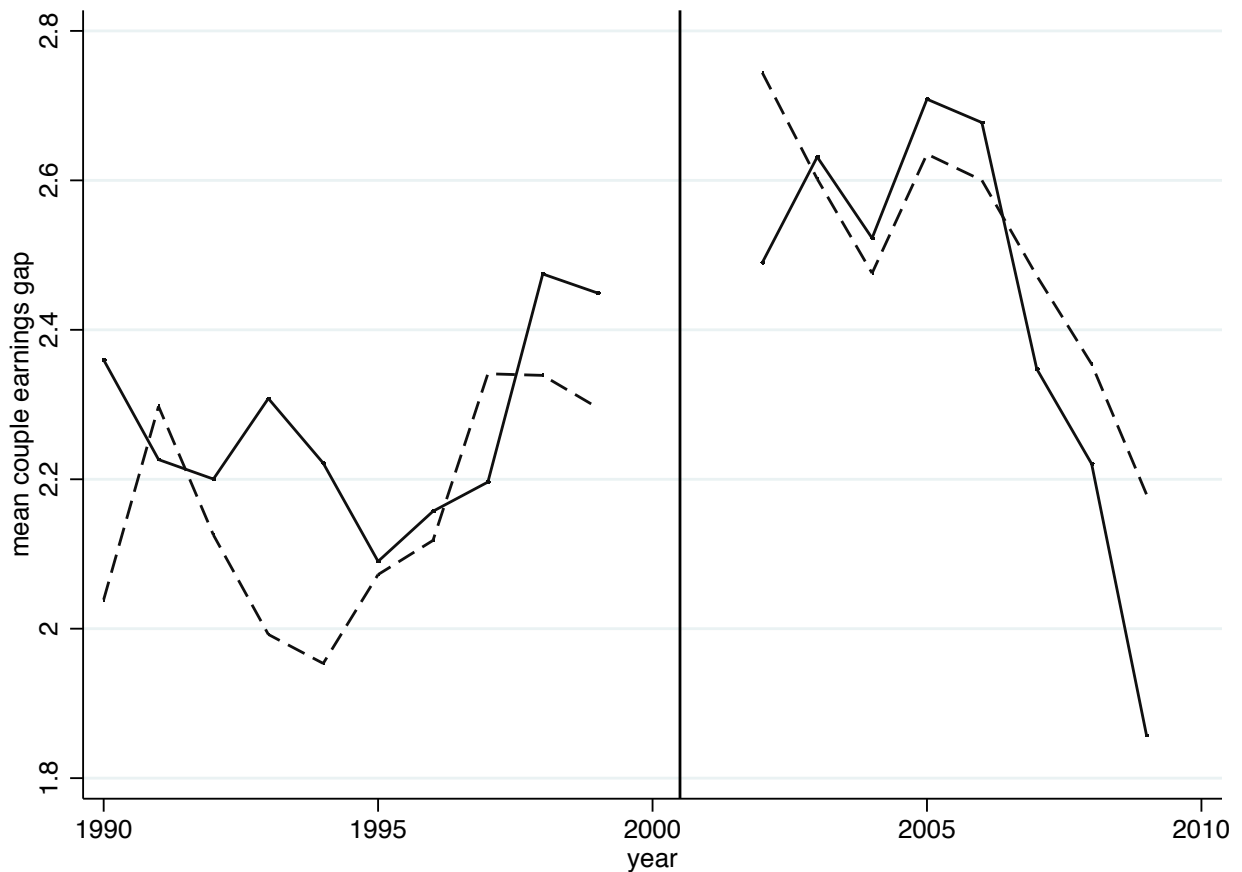
Figure 7: Earnings gap for treated and untreated couples (measured as the ratio of male and female yearly earnings). The solid line represents treated individuals, i.e., those couples entitled to paternity leave and the dashed line untreated couples. Observations for 2000 and 2001 are skipped as they can be contaminated by the fact that these are the years the couples had a child. We want to compare their earnings gap before having a child and after having a child. Couples where the male partner earns more than ten times as much as the female are excluded.

Table 6: Earnings of mothers and fathers

window	3 months		2 months		1 month	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Mothers:						
γ_{DID}	-0.092	0.068	-0.089	0.050	-0.143	0.003
	(0.091)	(0.075)	(0.107)	(0.091)	(0.157)	(0.134)
γ_{DID} - clustering	-0.092	0.068	-0.089	0.050	-0.143	0.003
	(0.069)	(0.070)	(0.089)	(0.062)	(0.104)	(0.105)
Number of observations	1,861	1,707	1,276	1,179	621	577
Controls	no	yes	no	yes	no	yes
Fathers:						
γ_{DID}	-0.017	-0.037	-0.041	-0.069	-0.100	-0.162
	(0.070)	(0.061)	(0.086)	(0.076)	(0.116)	(0.124)
γ_{DID} - clustering	-0.017	-0.037	-0.041	-0.069	-0.100	-0.162**
	(0.039)	(0.061)	(0.031)	(0.049)	(0.049)	(0.049)
Number of observations	2,142	2,006	1,458	1,372	719	673
Controls	no	yes	no	yes	no	yes

Note: The outcome variable is the log of the earnings of parents.
The 1, 2 and 3 month samples include all observations that are in the range of $[-1,1]$, $[-2,2]$ and $[-3,3]$ of the paternity leave reform. We control for birth year, education earnings in 1999 (prior to the birth of the child), whether they are living in the capital region, number of children they had before and number of children they had after. In the first set of estimates we use OLS standard errors whereas in the second we cluster the standard errors by the birth month of the child and education of the parent.

Table 7: Couple's earnings gap

window	3 months		2 months		1 month	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
γ_{DID}	-0.012	-0.198**	-0.055	-0.211**	-0.085	-0.281
	(0.098)	(0.087)	(0.116)	(0.103)	(0.103)	(0.153)
γ_{DID} - clustering	-0.012	-0.198**	-0.055	-0.211	-0.085***	-0.281*
	(0.053)	(0.059)	(0.057)	(0.047)	(0.043)	(0.076)
Number of observations	1,573	1,451	1,062	983	519	482
Controls	no	yes	no	yes	no	yes

Note: The outcome variable is the log of the earnings gap for couples
The 1, 2 and 3 month samples include all observations that are in the range of $[-1,1]$, $[-2,2]$ and $[-3,3]$ of the paternity leave reform. We control for birth year, education earnings in 1999 (prior to the birth of the child), whether they are living in the capital region, number of children they had before and number of children they had after. In the first set of estimates we use OLS standard errors whereas in the second we cluster the standard errors by the birthmonth of the child and the education of the mother (We also tried to cluster the standard errors by the education f the father and that did not change our results). The estimates only include those families where both spouses had positive earnings and where the male earned more than the female.

Table 8: Divorce

window	3 months		2 months		1 month	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
γ_{DID}	0.414**	0.384**	0.445*	0.442*	0.400	0.447
	(0.154)	(0.149)	(0.197)	(0.212)	(0.248)	(0.354)
γ_{DID} - clustering	0.414*	0.384***	0.445***	0.442***	0.400	0.447***
	(0.166)	(0.086)	(0.128)	(0.099)	(0.246)	(0.104)
Number of observations	564	564	385	385	186	186
Controls	no	yes	no	yes	no	yes

The first set of estimates we use OLS standard errors whereas in the second we cluster the standard errors by the birthyear of the child. The outcome variable is a dummy variable indicating whether the individual is divorced two years after having a child, i.e., in 2003. The 1, 2 and 3 month samples include all observations that are in the range of $[-1,1]$, $[-2,2]$ and $[-3,3]$ of the paternity leave reform.