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## **Career effects of taking up parental leave. Evidence from a Dutch University**

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### **Abstract**

In this paper we study the effect of parental leave on individual careers. We use individual registration data of a Dutch non-profit firm (Utrecht University). Our outcomes show that even with a short period of flexible leave there are career effects. More specifically, these effects are not unambiguously positive: slightly longer job durations are found, but also a lower probability of wage increases. It also appears that there are differences in effects between men and women: for men the effects appear to be smaller and of a more temporary character than for women. Apparently, even in a highly flexible system as the Dutch, with a high take up rate of men, the labour-care balance is still not gender neutral and not career neutral

**Keywords:** Parental leave, Labour force participation, Labour career, Gender

**JEL classification:** J22, J13

# 1 Introduction

In most countries, leave facilities are an important element of reconciliation policy. Especially when children are young, time related provisions such as leave entitlements, career breaks and the reductions of working hours are extremely important for combining work and private life. Yet, although leave facilities are an important reconciliation measure, the labour market outcomes may be rather negative, especially if the leave is long. In addition, the gender effects may be rather negative as leave is mostly taken up by women. For Germany, for example, Beblo *et al.* (2006) found a substantial decrease of 21% for in wages for women who take parental leave. Using data from the Nordic countries, Datta Gupta *et al.* (2008) found negative effects from the presence of long-time parental leave legislation on wages and consequently for career opportunities of women. Other studies argue that the actual effects of leave depend on the design of the entitlement. Bruning and Plantenga (1999) for example state that the emancipatory content of leave regulation depends on the relationship with the labour market which is expressed by the regulation, the share of men among the average number of leave takers and the percentage of (female) leave takers who return to the labour market after the leave period. In addition, Ruhm (1998) and Jaumotte (2003) suggest that both shorter and longer period of leave result in lower participation rate or in lower wages. In effect, the optimal duration of maternity and parental leave seem to be around four to six month in total.

If there is indeed such an optimal design of leave in terms of labour market effects, the Dutch legislation should be rated rather positively as parents are entitled to a relatively short period of parental leave. Since 1997, the total number of leave hours is set at 13 times the number of the contractual weekly working hours. The statutory right

is part-time: parents have the legal right to lower their working hours by 50% over a period of 26 weeks. However, employees may request the employer to spread the leave hours over a longer period than six months or to take more leave hours per week. As a result the actual duration of parental leave may range from 3 month on a full-time basis to 15 month when leave is taken for only one day a week.

The flexible and decentralized design of the Dutch parental leave legislation also implies that the take up of men is rather high. In fact, in 2008 17.9% of the eligible men and 37.0% of the eligible women took up parental leave. For men the average duration of the leave was 13 month for 8 hours per week, whereas women took on average 10 month leave for 11 hour a week. As a result, more than a third of all leave hours are taken up by men. This percentage is significantly higher than in other countries. Even in Sweden, where the take up of men is high, the duration of the leave between men and women is very different, as result of which less than 20% of all leave hours are taken up by men (Deven & Moss, 2005). This specific Dutch situation makes it possible to compare the labour market effects of male and female leave takers. Whereas most other research focuses on female leave takers and compares their career patterns with (male or female) non-leave takers, the Dutch case provides the unique opportunity to analyse whether taking up parental leave has a different impact on the labour market career of fathers and mothers.

As detailed representative data for the Netherlands are not available, we will assess career effects of taking up leave by analysing the personnel data from Utrecht University in The Netherlands over the period January 2002 till December 2009. These data allow for a detailed study on the take up of leave and the career path of the employees during these eight years. An important advantage of the focus on one single

employer is that this solves the sorting effect. Some authors point out that employees who plan to have children tend to pre-sort into sectors where parental leave regulations exists (Beblo et al., 2006), thereby influencing the labour market effects. One way of avoiding the sorting effect is to use data from a homogeneous group which makes it easier to single out the effect of the leave itself: in case two otherwise comparable workers within the same firm show any differences in career paths it is more likely that leave is the cause of this difference.

The structure of this article is as follows. In Section 2 there is a short review of the literature and of earlier results. In Section 3 we briefly introduce the system of parental leave in the Netherlands, and, more specifically, at Utrecht University. In Section 4 we introduce our data. In Section 5 we present a descriptive analysis, followed by a more formal empirical analysis in Section 6. Finally, Section 7 concludes.

## **2 Theory and earlier results**

In recent years a number of studies have been published on the impact of leave on future labour market outcomes. Most of these studies do not focus on career effect of taking up leave, but record labour market outcomes in terms of participation rates and wages. Two mechanisms responsible for the effects on labour market outcomes are put forward. The first one applies a straight-forward human capital argument and predicts negative effects of leave: leave results in a period out of work, which in turn leads to depreciation of human capital and a loss of (potential) work-experience. The second one can be interpreted as a kind of transaction cost argument and predicts positive results:

parental leave facilitates the return to the labour market after a period of non-participation due to lower search costs.

Most empirical studies on the effect of leave on careers start from the human capital argument. Rösen and Sundström (1996) use cross-sectional data on Sweden and Norway, which allow for a comparison between countries and cohorts. Ondrich *et al.* (1996; 2002) use individual panel data on Germany, which allow for the observation of full careers. These studies show that interruptions tend to loosen the tie with the labour market, and therefore decrease the possibility of participation in later life. They also show that individuals tend to take full advantage of the institutional system and use the maximum period of leave allowed. Ziefle (2004) reaches comparable conclusions with respect to wages: an increase in the duration of leave leads to a larger loss of human capital and therefore to a larger loss in terms of wages and job-security. There is little research on the labour market effects of leave on the Dutch labour market, yet Román (2006) presents a comparative study of the effects of ‘career detours’ based on Dutch and Belgian panel data. She shows that there are negative and lasting effects of career interruptions as well as of part-time work. Yet, the institutionalised Belgium career break system does not seem to harm women’s careers: the effects on wages appear negligible.

The studies above tend to use ‘not interrupting’ as the default: any interruption in the form of leave tends to result in a loss of human capital and in lower return rates. However, if the default is ‘quitting the labour market’ a leave facility might in fact have a positive effect on future careers, as leave allows employees to get some time off, and still maintain a fairly strong tie to the labour market. Apart from paying attention to the human capital argument, Rösen and Sundström (1996) also (implicitly) refer to the

transaction cost argument. Using data on Sweden and Norway, they find that women interrupting their career by means of formal leave arrangements actually have a much higher rate of return than women that do not use any leave arrangement and quit their job. This can be explained by the fact that women taking leave have a job to return to, in contrast to women who have quit their job. These results are confirmed also in larger international comparative studies of Mandel and Semyonov (2005; 2006) who find that countries with family friendly policies in general tend to have higher female participation rates, although the results with respect to the male-female wage differentials are negative. Also the study of Hashimoto *et al.* (2004) based on US data shows that in the US parental leave does not harm careers of workers, mainly due to the fact that the negative effect on human capital is too small to outweigh the positive effect of remaining linked to the labour market. The same conclusions are reached by Joesch (1997) and Waldfogel *et al.* (1999) who find that the positive effects of leave are mainly caused by the fact that workers remain at their pre-birth employer.

Neither the human capital nor the transaction costs argument is gender sensitive. Yet, there are indications that taking up leave has a different impact on the labour market career of men than of women. Beblo and Wolf (2002), for example, on the basis of a large dataset from IAB (Germany) conclude that all interruptions are costly in terms of wages, but that the costs differ between men and women and between various types of interruptions. The costs of interruption due to parental leave, for example, tend to be higher than one due to unemployment. These results seem to be in line with earlier results of Albrecht *et al.* (1999) on the wage effects of interruptions in Sweden. Their results indicate that the effects of interruptions are stronger for men than for women. In addition, the effects of various types of career interruption differ: parental leave has

strong effects on wages, while unemployment has smaller effects. The authors conclude that these results cast some doubt on the human capital explanation of wages: the results can more easily be interpreted as proof of sorting and signalling in the labour market.

Most of the above cited literature uses representative samples of micro data to analyse the effects of leave in terms of participation and/or the wage gap. In addition, they compare the labour market behaviour of (female) leave takers with (male) non leave takers. Unfortunately this is not a feasible research strategy in the Dutch case as detailed representative data are not available. Instead we focus on the career effects of taking up leave at the level of the firm. By studying the impact of parental leave on the exit options and the possibility of a wage increase at one particular employer, we will be able to analyse whether even in the case of the Netherlands, which has a flexible, part-time leave as the standard option, there are differences in mobility patterns and wage prospects between leave takers and non leave takers and between men and women.

### **3 Parental leave in the Netherlands**

In The Netherlands the Act on Parental leave was introduced in 1991. After a reorganisation in 1997, the total number of leave hours was set at 13 times the number of the contractual weekly working hours. The statutory right is unpaid and part-time: parents have the legal right to lower their working hours by 50% over a period of 26 weeks. However, employees may request the employer to spread the leave hours over a longer period than six months or to take more leave hours per week. The leave can be taken until the child is eight years old. In 2001, with the introduction of the new Work and Care Act the possibility to take leave became even more flexible as it became

possible to take leave in more than one period. In 2008, 37% of the eligible women and 17.9% of eligible men took up parental leave. Recently the parental leave legislation has been changed; by the first of January, 2009, the length of the parental leave is now settled at 26 weeks. The statutory right is still unpaid, but a fiscal facility of 50% of the minimum wage is, by the same date, granted for all employees taking up parental leave.

From the very start, the employer has been given an important role in the introduction of leave facilities within the Dutch working time regime. By way of collective labour agreements, the social partners are supposed to top up public policy which is mainly concerned with guaranteeing the minimum right. Indeed, Utrecht University has a (firm-specific) system of parental leave that is more flexible and better paid than the legal minimum. During the period covered by our study, there has been one major change, which took place in January 2007. Until 2007, in principle, there were two 'basic' models for the leave:

- A maximum of 50% of the contract hours of the employment during an uninterrupted period of a maximum of 4 months, with a continued payment of 75% of the leave hours; or
- A maximum of 50% of the contract hours of the employment during an uninterrupted period of a maximum of 6 months, with a continued payment of 50% of the leave hours.

In addition to this standard model, leave can be taken in almost any combination of weekly hours and income level as long as the total amount equals 1.5 month of salary. In Table 1 a number of examples is given, but in practice far more combinations are used, depending on the individual situation. For these other combinations explicit faculty management approval is needed.

In 2007 there has been a major revision of the system. From January 2007 onwards the number of leave hours was specified to be 13 times the weekly working hours (thus matching University regulations to Dutch law). It is still allowed to take leave in a flexible way as long as the total number of leave hours does not exceed 13 times the weekly working hours. The payment is no longer dependent on the length of the leave period: the payment of the leave hours is 62.5% of the normal gross hourly wage rate. Since January 2007, it is therefore no longer possible to trade a shorter period of leave against a higher level of payment (or vice versa) as was possible in the system before 2007. The system has thus lost some of its flexibility, and became less generous.

Table 1  
Parental leave arrangements at Utrecht University, until 2007

Continued payment of 75% of leave hours		Continued payment of 50% of leave hours	
Leave Term	Extent of leave in % of working time	Leave Term	Extent of leave in % of working time
2 months	100%	3 months	100%
3.3 months	60%	5 months	60%
4 months	50%	6 months	50%
5 months	40%	7.5 months	40%
8 months	25%	12 months	25%
10 months	20%	15 months	20%

Source: Regeling Universitaire arbeidsvoorwaarden, various issues: 1999-2006

## 4 Data

The data for this study come from the salary records of Utrecht University. From the year 2002 onwards the university uses a centralized system, in which a large number of details are registered regarding tenure, salary, working time and some other aspects (one of which being leave). As the system was not introduced at the same time in all

faculties, some faculties are not in the data from 2002, but only from 2003 onwards. Our data run up to December 2009.

Given the fact that the data are administrative data used for the salary payments, only aspects that are relevant to the payment of wages are registered. So, information with respect to educational level, household situation etc. is not recorded in the system. Also the number of children is not known. For women we know if a birth occurs in the period she is working at the university, as this is relevant information with respect to maternity leave and payment of wages. For men, birth of a child is not registered as this is not needed for administrative procedures. Therefore, we can relate birth and parental leave for mothers, but not for fathers. Also, we can observe employees leaving the university, but we do not know where and why they are going. It is therefore not possible to differentiate between employees who stop working altogether, and those who change employers. A similar situation arises for the new employees: we register a new employee starting to work, but we have no information on prior work experience.

With respect to parental leave, information regarding timing, length and intensity of the leave are registered. In total there are 1,487 recorded spells of parental leave over the period 2002-2009. Table 2 shows how the use of parental leave at Utrecht University evolves over time. As some employees have more than one period of leave (either due to multiple children, or as a result of splitting leave into multiple periods), the total number of employees involved is less than the number of leave spells: 363 men and 594 women, most of which have one or two periods of leave.

Table 2  
 Number registered periods of leave at Utrecht University by starting year (male and female employees)

Year	Men	Women	Total
2000 <sup>a)</sup>	0	3	3
2001	39	41	80
2002	58	91	149
2003	81	98	179
2004	61	102	163
2005	87	123	210
2006	73	142	215
2007	38	77	115
2008	52	122	174
2009	66	133	199
Total	555	932	1,487

a) Note that the spells beginning in 2000 and 2001 are only recorded as long as they have not yet ended by January 1<sup>st</sup> 2002. Spells ending before January 2002 were not recorded. The numbers therefore underestimate the total leave taken in these years.

Source: Salary records Utrecht University, 2002-2009

Table 3 shows that employees take ample opportunity of the flexible leave regulation. Most men choose for a leave that is relatively small in terms of hours per week, but covers a longer period: almost 62% of the male leave takers do so for maximum 20% of their weekly working hours, and more than 70% takes leave for a period longer than 6 months. For female employees, the pattern is more diverse: compared to men less women limit their leave to one day a week although the proportion that does is still considerable (36.6%). A relatively high percentage of women take leave for 20-40% of their weekly working hours, and almost 14% of the women involved chose to have a full-time leave. When we compute leave in terms of actual days taken, the difference between men and women is very small: women take on average 51 days over a nine-month period, while men take 50 days over a ten and a half month period. All in all it can be calculated that approximately 40% of the leave days is taken up by men. This percentage seems to be in line with the evidence of other Dutch public sector companies.

Table 3  
 Choices made with respect to extent and length of the parental leave, in percentages of total number of leave periods (male and female employees)

Men						
Length	extent of leave in percentage of weekly working hours					Total
	0-20%	21-40%	41-60%	61-80%	81-100%	
0-<=3 months	1.6	2.2	2.0	1.1	7.7	14.6
3-<=6 months	4.0	3.8	4.3	0.5	0.2	12.8
6-<=12 months	24.9	13.7	0.5	0.2	0.0	39.3
12-<=15 months	22.3	1.3	0.4	0.0	0.0	24.0
more than 15 months	8.8	0.5	0.0	0.0	0.0	9.4
Total	61.6	21.4	7.2	1.8	7.9	100.0

  

Women						
Length	extent of leave in percentage of weekly working hours					Total
	0-20%	21-40%	41-60%	61-80%	81-100%	
0-<=3 months	0.9	2.5	1.9	0.2	13.1	18.6
3-<=6 months	2.9	7.8	6.1	0.6	0.5	18.0
6-<=12 months	12.4	25.4	1.1	0.2	0.0	39.2
12-<=15 months	12.9	2.4	0.2	0.2	0.1	15.8
more than 15 months	7.5	1.0	0.0	0.0	0.0	8.5
Total	36.6	39.1	9.3	1.3	13.7	100.0

Source: Salary records Utrecht University, 2002-2009

## 5 Descriptive analyses

Before going into more detailed analyses, in this Section some descriptive tables on the relation between leave and career outcomes are presented. In the literature, the impact of leave is mostly calculated in terms of participation rates and relative wages. Translated to the level of the firm, we are especially interested in the impact of taking up leave on the individual careers of men and women. More in particular we have

calculated the exit probability, the working hour changes and the probability of receiving a more than regular wage increase by gender and taking up parental leave.

Table 4  
Exit probability and working hour changes over 1 year, by gender and parental leave taking at Utrecht University, in percentages

Gender	Leave	Left University	Less hours	No change	More hours	Total	Number of Observations
Men	No	11.0	2.8	83.7	2.5	100	25,550
	Yes	7.3	7.9	83.2	1.6	100	758
	Total	10.9	2.9	83.7	2.5	100	26,308
Women	No	12.8	5.5	75.8	5.9	100	20,955
	Yes	5.8	17.5	74.3	2.5	100	1,140
	Total	12.4	6.1	75.7	5.7	100	22,095
Total		11.6	4.4	80.0	4.0	100	48,403

Source: Salary record Utrecht University, 2002-2009

As a first indication, Table 4 shows the percentage of employees that left university and those that experienced a change in working hours, based on (pooled) transition data. Over the period of a year, 11.6% of the employees leave their job. There is a difference between men and women: 10.9% of the men have left, compared to 12.4% of the women. Of those employees who took a period of leave recently, a considerable lower percentage leaves their job: only 7.3% of the men and 5.8% of the women. Next to the exit-mobility, the Table reveals a lot of hours-flexibility. On average, 4.4% of the employees reduce working hours, and 4.0% of the employees increase their working hours. Again, there is a difference between men and women: amongst men only 2.9% reduce working hours, while amongst women this percentage is 6.1%. Also the percentage of employees increasing working hours is larger amongst women: 5.7% of the women compared to 2.5% of the men. Taking up leave seems to be a relevant issue in this respect: amongst workers who took leave the percentage of employees who

lowered working hours is relatively high: 7.9% amongst men compared to 2.9% for the total male population, and 17.5% amongst women, compared to 6.1% for the total female population.

Table 5  
Wage increase over 1 year, by gender, birth and parental leave at Utrecht University

Gender	Leave	No increase (end of scale)	Regular increase	More than Reg. incr.	Left university	Total	Number of observations
Men	No	40.4	40.1	8.5	11.0	100	25,550
	Yes	26.8	54.6	11.3	7.3	100	758
	Total	40.0	40.5	8.6	10.9	100	26,308
Women	No	31.5	45.0	10.7	12.8	100	20,955
	Yes	25.0	58.2	11.1	5.8	100	1,140
	Total	31.2	45.7	10.7	12.4	100	22,095
Total		36.0	42.9	9.5	11.6	100	48,403

Source: salary records Utrecht University, 2002-2009

Table 5 indicates the transitions in terms of wage changes. Over a period of one year, workers normally receive their yearly wage increase, unless they are at the end of their salary scale. So the deviations from this standard are the more interesting transitions. It can be seen that the majority of the university employees is either at the end of the salary scale (36.0%), or does receive the standard yearly wage increase (42.9%). There is a slight difference between men and women in these percentages, which can presumably be explained from the -on average- longer tenure of the men. On average, 9.5% of the employees receive a more than the regular wage increase, 8.6% of the male employees and 10.7% of the female employees. Amongst the men, there is also a slight difference between the employees that did take leave, and those who did not: in the first group 11.3% received an increase, and in the other group 8.5% did. The difference in the group of female employees, although pointing in the same direction, is almost absent.

The information in the Tables suggests some (gender specific) correlation between leave-taking and working career. As descriptive tables might be misleading with respect to the actual size of the correlations, in the next Section we will estimate two explanatory models, one for the exit probability (by means of a Cox-regression) and one for the probability of a wage increase (by means of a fixed effect logit model). In both models one of the key explanatory factors is the take-up of parental leave by men and women.

## **6 Estimation results**

To estimate the effect of leave taking on the exit-probability we will use a Cox proportional hazard model, in which we relate the exit probability to the fact whether or not an individual is on leave, or has experienced a period of leave. Using this model we take full account of the structure of the data. To estimate the probability of a wage increase, we do not use a duration model, as the event does not need to happen, or can happen more than once. In this case a panel data logit model is more appropriate. As both leave and career are possibly influenced by common factors not included in the model (such as number and age of children or individual preferences towards a labour career) we will use fixed effect models in order to obtain unbiased estimates of the effect of parental leave.

In both models we excluded professors as there seemed to be quite a lot of atypical appointments in this group (very small appointments, appointments with very short durations, interrupted appointments after the legal retirement age, etc.). As there was virtually no leave taking in this group, the impact of the decision is likely to be very

small. We also excluded the group of PhD-students (who in the Dutch context have a formal labour contract with the University). The career of PhD-students is very much dictated by institutional regulations, and as such does not contain any information with respect to the effects of leave taking (or any other explanatory factors). As a result, we concentrate on non scientific and scientific staff.

### *Exit probability*

In order to solve the problem of left-censoring, we exclude for the Cox model all workers that entered the university before the registration in our data starts. Notice that part of the group excluded, did in fact take a period of leave. However, excluding this left-censored group is necessary to get a proper estimate of the baseline hazard. We also exclude workers that entered university at ages over 55, as a relatively large number of non-standard contracts are amongst them. As we are primarily interested in the effects of taking parental leave, we have included a time varying dummy variable indicating whether or not parental leave occurred. Age at entrance in the job and job type at entrance are added as additional explanatory variables. Although it can not be ruled out that interaction effects exist, the number of observations was such that the estimation with interaction effects did not lead to acceptable outcomes.

In Table 6 we present the estimation results with respect to the probability of leaving the university. The results shown are the proportional hazards, i.e. the factor by which the baseline hazard is multiplied, so estimates below 1 indicate a decrease in the exit probability (relative to the baseline hazard), while estimates above 1 increase the exit-probability (relative to the baseline hazard). Not shown here are the plots of the baseline hazard, which essentially go down with the length of the tenure. In the first

column, we show the estimated parameters for the total group of employees. In the first line of the Table the effect of being on leave is shown. It turns out that being on leave reduces the probability of leaving the university considerably. The estimated hazard rate is 0.373, indicating that during the period of leave the exit probability is only one third the baseline exit rate. This is a considerable reduction in exit rates in the short run. There is, however, no effect of leave in the past: the estimated hazard rate does not differ significantly from 1, indicating no change in the exit probability as a result of leave taking in the past. Taken together, it seems that in the short run parental leave has a positive effect on the job-tie of a worker. This effect is only for the duration of the period of leave. Although there is some suggestion of the effect lasting after the period of leave has ended, this effect is not significant. Thus, the total effect of parental leave taking on the exit probability is relatively small. The exit-probability is far stronger influenced by the two control variables age and job-type. Employees that are older when they start working at the university have lower exit-probabilities: exit probabilities drop 4% at each year of age. The exit rates of scientific staff are well above the exit rates of non-scientific staff.

Separate estimation of the model for men and women indicate that the effect of leave is very strong for women, for who almost no quitting is observed during or directly following a period of leave; being on leave lowers the exit-probability by 73%. For men the effect is smaller and not significant. A formal likelihood-ratio test on the equality of the two models for men and women shows that the difference is non-significant, which leads us to the conclusion that the effect of leave for men and women

on the exit probability is equal.<sup>1</sup> This is mainly explained by the fact that the estimated effect of leave for the men has a rather large standard error.

Table 6  
Estimation results (hazard rates) of Cox-proportional hazard model of exit-probabilities

	Total <sup>a)</sup>	Women	Men
Leave going on	0.373*** (0.12)	0.267*** (0.13)	0.543 (0.24)
Leave in the past	0.916 (0.14)	0.872 (0.16)	0.983 (0.24)
Age at entrance	0.959*** (0.00)	0.957*** (0.003)	0.962*** (0.003)
Scientific staff	1.321*** (0.04)	1.290*** (0.05)	1.366*** (0.07)
Number of individuals	7,106	4,062	3,044
Number of failures (exits)	4,194	2,422	1,772
Log likelihood	-31,640.6	-18,562.8	-13,076.10
Model significance	$\chi^2(4) = 440.7^{***}$	$\chi^2(4) = 271.8^{***}$	$\chi^2(4) = 172.3^{***}$

Standard errors in parentheses, significance levels given for the hypothesis that the hazard rate equals 1.

<sup>a)</sup> The total model is stratified by gender to allow for differences in the baseline hazard.

\*:  $p < 0.10$ , \*\*:  $p < 0.05$ , \*\*\*:  $p < 0.01$

Source: Salary records Utrecht University, 2002-2009

### *Wage increase*

The model for the wage increase is estimated using a fixed effect logit model. A wage increase in this model is defined as a higher than the normal wage increase. Both ‘no change’ and the ‘regular yearly increase’ are combined into the reference category. Due to using a different econometric specification, the selection of the sample differs from the one used for the model for the exit probability. For the fixed effects logit model we exclude all workers aged over 50, to make sure that we are not modelling the retirement

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<sup>1</sup> The likelihood ratio statistic is calculated as  $2 * ((13,076.1 + 18,562.8) - 31,640.6) = 3.34$ , which has a  $\chi^2$ -distribution with 4 degrees of freedom. Note that the models are nested due to the gender specific baseline hazard in the combined model.

process. In doing so, we exclude a small number of individuals (mainly men) taking parental leave. Because the estimation of a fixed effects logit needs at least one positive outcome, all employees that never received a more than regular wage increase are excluded from our sample. We use dummies to indicate whether or not parental leave has been taken in the previous year or the years prior to that. As additional explanatory variables we use tenure and dummies that indicate whether individuals are on a permanent contract, and whether they are still eligible for the standard yearly wage increase. Tenure is included both linear and quadratic to account for the fact that mobility might decrease over the life course. We also included a variable indicating the weekly working hours. Job type can not be included, as there are virtually no changes in this variable within individuals over time.

As can be seen in the first column of Table 7, leave has a small but significant effect on the wage development of employees in the short run. Leave taken two or three years ago has no significant effect on wage increases. The explanation of the decrease in the probability of a wage increase may be that although leave ensures a tie to the employer, for a more than a minimal wage increase some additional effort is needed. Taking leave apparently prohibits this additional effort, and therefore decreases the probability of receiving a wage increase, even if the leave is relatively short, or is taken up in part-time. Notice however, that on average leave takers tend to be on lower wage levels in the remainder of their career, as they faced a lower probability of a wage increase. This finding suggests that even in a rather regulated system, we find support for the findings in other studies that periods of leave tend to have a negative effect on future wages, both in levels and in growth.

Again, we test for the equality of the effects of taking leave for men and women. In the second column of the Table, we show a model on pooled data, in which we allow for some parameters to be gender specific. In this specification we can see that there are some differences between men and women. Especially the effect of leave taken in the past differs between men and women: for women, the probability of a wage increase if leave has been taken three years ago is significantly smaller than for men. This suggests that effects for women tend to be longer lasting, while for men there is a catching-up in the years after leave has been taken. This lasting negative effect for women might be related to the shift between work and family life that take place in women's careers, although we corrected for the fact that a reduction in working hours also negatively influences wage development. This finding is in contrast with earlier results by e.g. Albrecht *et al.* (1999) and Beblo and Wolf (2002) who found that wage effects tend to be much stronger for men than for women. The only other effect that is gender-specific is the effect of being at the end of some one's wage scale: it seems as if men have higher probability of getting promoted into the next scale than women.

For reference, we also included in column three and four of the Table the models in which all effects are assumed to be gender specific. From a formal test, it follows that this specification is rejected against the specification in the second column. It can be seen in these columns, however, that the difference in the effects of leave in the past is large: for men it is positive and non-significant, for women it is negative and significant. For women, the effect of leave in the past is even stronger than the effects of leave last year.

Table 7  
 Estimation results of a conditional fixed effect logit model to explain wage mobility at Utrecht University

	Total	Men	Women	
	with gender specific effects			
Leave last year	-0.186* (0.10)	-0.183* (0.10)	-0.141 (0.17)	-0.206 (0.13)
Leave two years ago	0.051 (0.13)	0.305 (0.20)	0.320 (0.21)	-0.098 (0.17)
Leave two years ago*female		-0.400 (0.25)		
Leave three years ago	-0.123 (0.15)	0.298 (0.22)	0.299 (0.23)	-0.376* (0.20)
Leave three years ago*female		-0.684** (0.29)		
Tenure	-0.148*** (0.02)	-0.146*** (0.02)	-0.135*** (0.03)	-0.154*** (0.03)
Tenure <sup>2</sup> /100	-0.415*** (0.12)	-0.424*** (0.12)	-0.415** (0.17)	-0.452** (0.18)
Permanent contract	-0.621*** (0.08)	-0.625*** (0.08)	-0.677*** (0.13)	-0.582*** (0.11)
End of scale	1.150*** (0.07)	1.309*** (0.10)	1.303*** (0.11)	1.005*** (0.10)
End of scale*female		-0.309** (0.14)		
Part-time percentage (1-100%)	-0.038*** (0.002)	-0.038*** (0.002)	-0.039*** (0.002)	-0.037*** (0.002)
Number of observations	14,317	14,317	6,855	7,462
Number of individuals	2,504	2,504	1,197	1,307
Log likelihood	-4,231.4	-4,225.4	-2012.8	-2211.9
Log likelihood (const.only)	-5,182.5	-5,182.5	-2477.7	-2704.8
Model significance	$\chi^2(8)=$ 1,902.4***	$\chi^2(12)=$ 1,914.4***	$\chi^2(8)=$ 929.8***	$\chi^2(8)=$ 985.8***
Pseudo R <sup>2</sup>	0.184	0.185	0.188	0.182

Standard errors in parentheses, \*: p<0.10, \*\*: p<0.05, \*\*\*: p<0.01  
 Source: Salary records Utrecht University, 2002-2009

## 7 Conclusions

From an equal opportunities point of view, the Dutch parental leave legislation scores rather high. There is a flexible system of parental leave that has relative short periods of part-time leave as the standard option. In addition, men take a substantial part of the total leave. The literature suggests that in this situation we should find only little

negative effects of leave on individual careers. Using personnel registration data from a Dutch university we show that during a period of leave there is a significant decrease in the exit-probability. However, after the period of leave ends, there is no significant difference in exit rates between leave takers and non-leave takers. In addition, taking leave lowers the probability of a more than regular wage increase. For men this is a temporary negative effect on growth, for female employees the probability of wage growth is negatively affected by leave that has been taken longer ago.

Based on our outcomes, we conclude that taking up leave delays mobility and has a negative effect on wages. Although the negative effects on wage growth are small, especially the fact that for women they remain visible over longer periods does indicate that even in a highly flexible system as the Dutch, with a high take up rate of men, the labour-care balance is still not gender neutral and not career neutral. This raises again the issue of the optimal design of parental leave, making it more compatible with paid work and/or trying to facilitate equal sharing. Presumably there is no easy answer to this question. In fact, it seems likely that the care infrastructure can only to a certain extent be 'employment led'. Whereas fiscal policy and social security policy become more and more targeted towards increasing the employment rate of both men and women, care policies are (also) motivated by different issues, like the fertility rate, family values and child well being. Although policies in these areas may not by definition contradict labour market considerations, the Dutch case illustrates that some trade-offs are likely to exist between facilitating care and stimulating equal opportunities.

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