Working part-time and caring in Europe: medium and long-term term effects on employment and wage careers

Paper prepared for the GSOEP Conference, 9-11 July, 2008 in Berlin.

Didier Fouarge
Ruud Muffels

1. Introduction

In this paper we use the three long-running national panel studies – for the Netherlands, the UK and Germany – to study the long-term effects (ten years) of part-time work on the future career. Part-time employment is becoming an increasingly common phenomenon in Europe. Although the majority of male workers are employed in full-time jobs, a substantial and increasing fraction of the female labour force is working shorter hours in Europe. The divergence across EU Member States, however, is large. In the Scandinavian countries, such as Denmark, Finland and Sweden most women work nearly full-time (two-earner model) whereas in the Southern countries – with the exception of Portugal – many women do not work at all (single earner model). In the UK, with less employment protection rules, women tend to participate more and also work longer hours. The Netherlands, but other European countries such as Germany and France as well, seems to embrace the one-and-a-half earner model.

The three countries share a common feature in that part-time employment is widely spread (among females at least). Particularly, the Netherlands is known as being "the first part-time economy in the world" as some scholars have called it (Visser, 2002). The three welfare states also have quite diverse policies with respect to supporting working mothers in the domains of income and labour market. The three countries represent more or less different worlds of welfare and hence, different policy regimes with respect to supporting working mothers and fathers in reconciling their work and private life. Due to our focus on three countries only we cannot formally test, as in previous papers (Fouarge and Muffels, 2006; Muffels and Fouarge, 2006), the role of macro-institutional features on working part-time and how it affects the future career but of course in viewing differences across them we can draw some tentative conclusions about the role of policies behind it.

We use a ten year observation window and we examine the duration or path dependence of transitions out of part-time employment into other employment statuses. We also examined the impact part-time employment has on the wage later in the career. Thirdly, we explicitly account for different types of transitions out of part-time employment into full-time employment, unemployment or inactivity (withdrawal from the labour market).

The paper is structured as follows. In Section 2 we discuss the background and the research question of this paper. We also develop a number of hypotheses to be tested. In Section 3, we briefly discuss the data and the main variables used in the analyses. Section 4 provides some descriptive results on part-time employment, while Section 5 presents and discusses the econometric analyses for the transitions out of part-time employment. In Section 6 we deal with the effect of part-time employment, now and in the past, on wage income. The main conclusions from the paper are summarized in Section 7.

2. Background and research questions

Previous research has shown already that the birth of a child does have a much larger effect on the labour market participation of females than of males (Fouarge and Muffels 2006, Dekker et al., 2000). Males tend to work full-time and are less inclined to adapt their behaviour due to the birth of children. On the contrary, if women tend to reduce working hours due to childbirth the household misses income while at the same time the costs of children raises the income needs of the household. Our estimates derived from an accompanying paper (Fouarge and Muffels, 2006) show that net of observed and unobserved characteristics, childbirth has a negative effect on annual earnings and on the hourly wage. The birth of a child reduces the labour market income by some 5 percent and the hourly wage by 18 percent in Europe in the short run.[1] For economic reasons one might suspect that these additional costs of children and the reduction of income lead to pressure on the father to maintain or raise earnings by not reducing but even increasing working hours.

The institutional support of working women through income or employment policies might affect the decision of mothers and fathers to work a particular number of hours. It might be for that particular reason that the Netherlands stands out as the country with most women working part-time but it might also be that the differences across the three countries just reflect the cultural habits, norms or values with respect to working mothers so that it mirrors the stronger preferences of women to work shorter hours than in the other countries. Uunk et al. (2005), using panel data from 13 countries of the EU, found evidence in favour of the institutional and economic explanation. "In countries with more generous provision of public childcare and in countries with a lower level of economic welfare, the impact of childbirth on female labour supply is less negative than in other countries. Economic welfare appears to suppress rather than rival the institutional effect. More egalitarian gender role values in a country increase mothers' labour supply, yet these values do not alter the institutional effect. The results underpin the importance of publicly supported arrangements for enhancing female labour supply" (Uunk et al. 2005: 41). Similar conclusions might be drawn from the existing evidence presented in an accompanying paper also using the ECHP (Fouarge and Muffels, 2006). In that paper it is found that the effects of childbirth on future labour market participation are markedly different across countries and welfare regimes. In corporatist but also in liberal countries a higher proportion of women tend to withdraw after childbirth than in social-democratic

[1] Estimates based on 8 waves of ECHP.

countries but the pace of recovery from the initial drop is also likely to be stronger, particularly in the UK (see Fouarge et al., 2006). When children grow older more women tend to alter their labour market position. After an initial exit, they are likely to re-enter paid employment, or if they did not exit, to move from part-time into full-time. The patterns for males are rather different, for them part-time work seems to be a transitory state towards full-time employment.

The research questions to be tackled in the paper are therefore threefold:

1. To what extent is part-time employment a permanent state? Or to put it otherwise, do part-time workers stand a chance in acquiring a job with longer hours? Obviously when dealing with this question, it is crucial to take account of individual preferences and labour market constraints. While these are not measured directly in our data, we use a detailed household structure variable to account for them.

2. To what extent does part-time employment in the past have a scarring effect on the current wage level? More precisely, what is the impact of a history of part-time employment on the current wage? If part-time employment is indeed 'scarring', one would expect that employed persons with part-time employment experience end up with lower wages, even after returning to full-time employment.

3. Which differences are to be found across the three welfare states in the so-called 'scarring' effects of past part-time employment on the current employment and wage position? What is the key factor in explaining the different patterns across the three countries, and which role is played by the labour market itself or the supporting institutions for working mothers in fulfilling their preferences with respect to their working and caring duties?

Hypotheses
The first hypothesis deals with the dissimilar impact of part-time work experience on the future career for different family types. Part-time work might have an adverse effect on future employment positions but particularly for women with young children who, due to caring duties, are not able to shift into working full-time.

Hypothesis 1. For couples with (young) children the past work experience in part-time jobs is likely to reduce the chances to be in full-time employment later in the career. For singles and couples without children or where the children have left home (empty nest) the pattern might be very different because of which they more easily be in full-time positions, conditioned on having worked part-time in the past.

The second hypothesis deals with the reduced chances of people with part-time experience in the past to work in a full-time job ten years later.

Hypothesis 2. After ten years of time we expect that compared to full-timers part-timers still experience reduced chances to move into a full-time job. We also expect that the

longer the stay in a part-time job the stronger the 'scarring' effect will be on the future chances to move into a full-time job.

The third hypothesis deals with the dissimilar effect of part-time work on the future career across the three panel studies or nations.

Hypothesis 3: The more efficient the labour market operates and the more jobs are available, the more likely that working part-time in the past has only a small effect on the current employment position because part-time working males and females have a lot of opportunities to recover from the initial withdrawal. In coordinated economies women tend to participate less due to caring and household duties and the institutions are also aimed at supporting part-time working females to allow them to fulfil their caring obligations, such as in Germany and the Netherlands. We expect that women in these countries are less likely to move from part-time into full-time jobs after the care break than in the unregulated liberal labour market of the UK where the social norms and the supporting institutions are oriented at getting women as well as men into fulltime jobs. Past part-time work experiences will therefore exert a negative effect on the future chances to work in full-time jobs in the coordinated economies whereas this effect is likely to be much smaller in the unregulated British labour market.

Working part-time or full withdrawal from the labour market due to caring obligations might also have a scarring effect on future wages. The background of it is that women might incur a loss of human capital due to the part-time or full-time break from the labour market. This loss of human capital not only affects their probability to increase participation and working hours but also the probability of returning to a job, if they left their previous job, that pays off equally to the previous one. In other words, mothers who exit from paid employment due to caring duties are more likely to return to a lower paid job. This is more likely to be the case as the spell of inactivity is longer. It is also more likely that they return to a lower paid job in a labour market that rewards firm-specific capital more than general human capital such as in the Netherlands and Germany. In these countries pay systems are linked to internal labour markets, and skills acquired on the job are relatively more rewarded than formal skills acquired through general education (e.g. see Hall and Soskice 2001). Our second and third hypotheses read therefore as follows:

Hypothesis 4: We expect the wage level to be lower for males as well as for females having worked part-time in the past ten years.

Hypothesis 5: Reducing participation and working hours due to caring duties might have a lasting effect on future earnings and hourly wages. Earnings and wage drops are more likely to occur in the more flexible labour market of the UK than in corporatist Germany where policies are focused on safeguarding income and employment continuity. The Netherlands is expected to take an intermediate position.

Hypothesis 6: We expect the scarring effect of part-time work history on the current wage level also to exist for women who worked part-time ten years earlier but moved into a permanent job and already worked there for five years. They are contended not to recover their initial wage entirely within the five year period following the unemployment period.

3. Data, methodology and main definitions

Data
In this paper, we use the long running panel data for the Netherlands (SEP), the UK (BHPS) and Germany (GSOEP). These are the three longest running panel data in Europe. People aged 16-64 are selected for the analysis, unless otherwise mentioned.

Part-time
The main variable used here concerns the number of hours worked. In particular we divide the group of employees (we exclude self-employed as they are free to set their own hours) in two groups: employees working more than 1 hour but less than 35 hours, and employees working 35 hours per week or more.

Wage
The wage concept used is the gross hourly wage rate. In the GSOEP and SEP, only gross yearly earnings are known for the year prior to the survey year. Gross yearly earnings have been divided by the number of hour worked on a yearly basis in the corresponding year. All wage data are expressed in Euros in constant 2005 prices.

Household composition indicating the life-course
The time it takes to care for the children is the main reason why females are involved in part-time employment. For this reason, we have constructed an extensive household typology that accounts both for whether or not there are children in the household, and for the age of the children. As such it also indicates – at least partially - the stage of the life-course of households. The following categories are distinguished: couple, no child below 16 years; couple, youngest child 0-5 years; couple, youngest child 6-15 years, single, no child below 16 years; single parent, youngest child 0-5 years, single parent, youngest child 6-15 years; other.

Methods
The strategy to answer the research questions from Section 3 is threefold. Firstly, we present and discuss descriptive statistics on the extent of part-time employment in the three countries under scrutiny, the duration of part-time employment, and the exit from part-time employment within various time horizons: 1 year, 5 years, and 10 years (Section 4). Secondly, we use advanced econometric methods to investigate the exit from part-time employment (Section 5). The models used account for the time dependence of part-time (the effect of duration on the probability to exit part-time employment), key household structure characteristics included to account for the effect of caring obligations of males and females on the exit from part-time, as well as a number of relevant observed characteristics of the individuals. Thirdly, we used econometric methods to estimate the

effect of part-time employment has on the hourly wage (Section 6). We look at the effect on the current wage, but also on the effect on the wage after as individual working part-time has made a lasting transition into full-time employment. The variables included in the models are described in Table A1 in the Appendix.

4. Descriptive results

4.1 Labour participation and share of part-time employment

In Figure 1 (a, b, c) we present evidence on the evolution of the overall participation rates for males and females over time and the share of part-time in female and male employment for the three countries. It shows an increasing share of part-time work among females but not among males in the Netherlands and Germany but rather stable percentages in the UK for both men and women.

Figure 1a: participation rate and percentage employees with a part-time contract in the Netherlands, SEP, 1984-2002 (percentage)

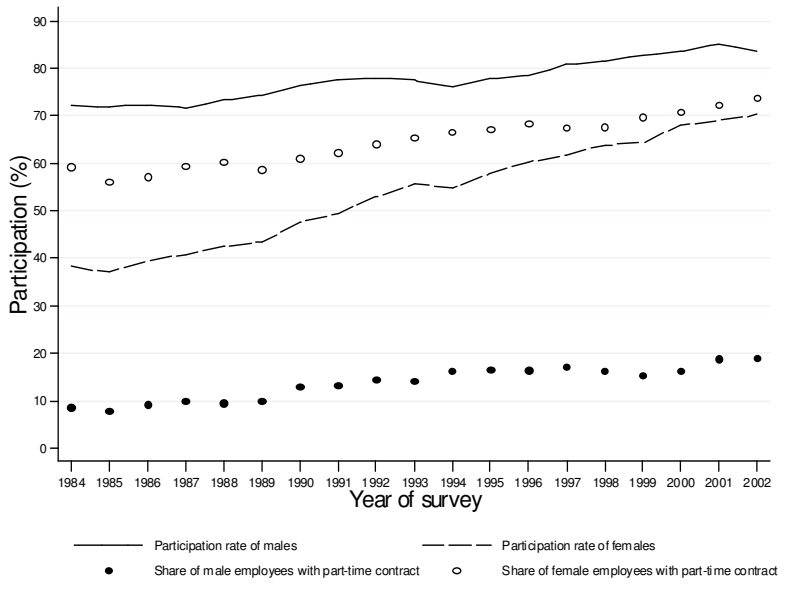


Figure 1b: participation rate and percentage employees with a part-time contract in the UK (percentage)

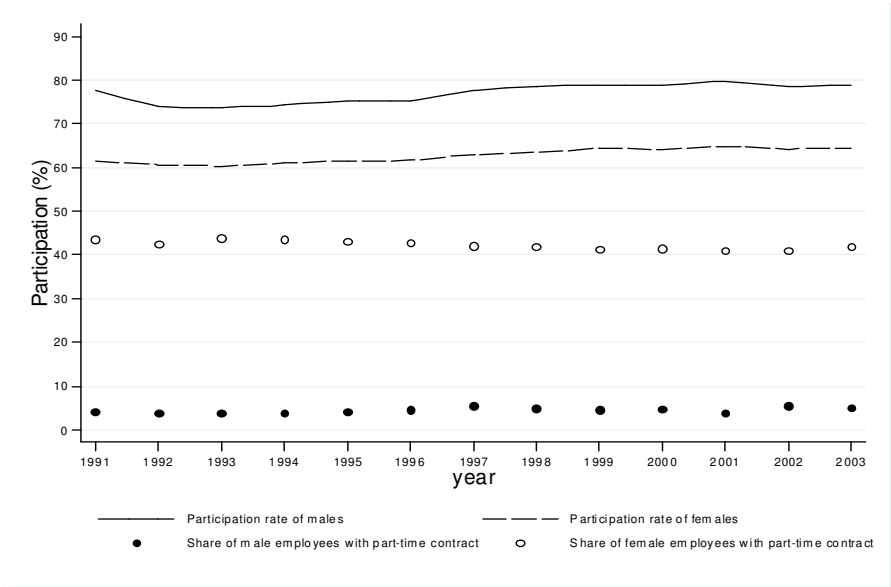
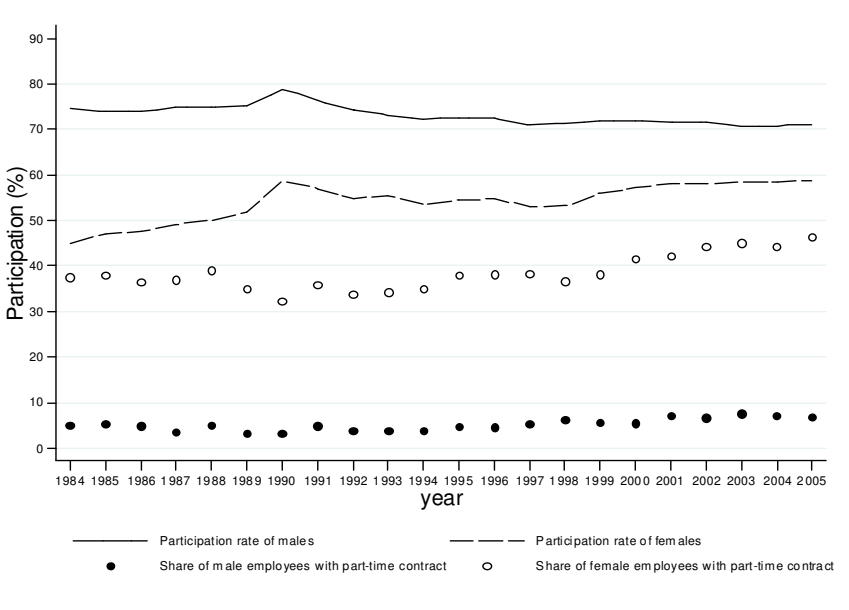


Figure 1c: Participation rate and percentage employees with a part-time contract in Germany (percentage)



The share of part-timers very much follows the path observed for the overall participation rates in the three countries though the initial level differs a lot between the countries especially for women with the Netherlands on top of it with more than 70% of females in part-time work in 2002 against 60% in Germany and 45% in the UK.[2] The male

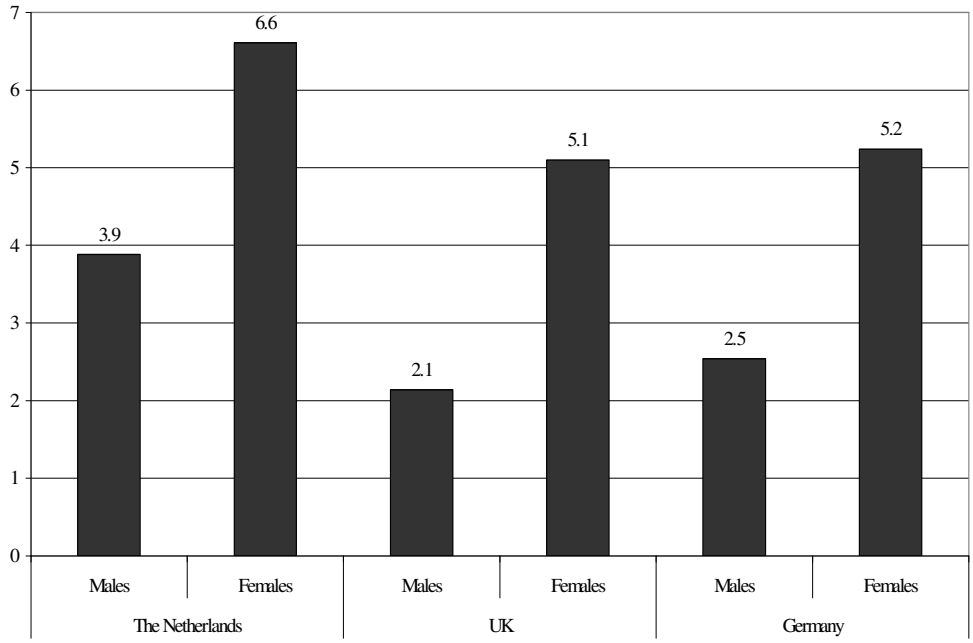
[2] These percentages are similar to those found on the basis of the official European sources (European Commission, 2006).

percentages are much lower, 5% in the UK, 8% in Germany and 19% in the Netherlands for the most recent years.[3] If we split the numbers for Germany between East (1991-2005) and West-Germany (1984-2005) it is shown that the increase in part-time work is much more pronounced in the East due to the very low level it starts from in the early 1990s.

4.2. Duration of part-time employment

Figure 2 depicts the average duration of part-time employment spells in the three countries. While durations of part-time employment are more or less similar in the UK and Germany, Dutch males as well as females remain on average longer in part-time employment. The average duration in part-time work is almost 4 years for Dutch males, compared to 2.1 and 2.5 years in the UK and Germany, respectively. Dutch females remain 6.6 years in part-time employment, compared to somewhat more than 5 years in the UK and Germany. Although for males part-time work seems to be a transitory phase they still remain on average four years in a part-time job.

Figure 2: Average duration of spells of part-time employment (years)



[3] The percentages for the Netherlands and Germany and in line with percentages from official European statistics (European Commission, 2006), but our data seems to underestimate the proportion of part-time males workers in Great Britain.

Table 1: Transitions out of part-time employment between t and t+1, t and t+5, and t and t+10, by exit state (percentages)

Exit t - t+1	The Netherlands			UK			Germany		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
No exit	66	83	79	43	76	73	44	75	70
Full time	21	7	10	35	10	12	32	9	13
Self employment	1	1	1	5	3	3	3	2	2
Unemployment	3	2	2	7	2	2	4	3	3
Inactivity	10	7	8	11	9	10	17	11	12
Total	100	100	100	100	100	100	100	100	100
Exit t - t+5	The Netherlands			UK			Germany		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
No exit	35	65	58	16	56	53	21	57	52
Full time	47	14	21	54	19	22	51	16	20
Self employment	3	2	2	8	3	4	7	3	3
Unemployment	3	3	3	6	2	2	6	5	5
Inactivity	12	17	16	16	20	19	15	20	19
Total	100	100	100	100	100	100	100	100	100
Exit t - t+10	The Netherlands			UK			Germany		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
No exit	24	57	50	8	43	41	14	46	42
Full time	61	15	25	63	27	29	56	18	23
Self employment	3	3	3	12	4	4	12	4	5
Unemployment	2	3	2	5	2	2	7	5	5
Inactivity	10	23	20	11	25	24	10	27	24
Total	100	100	100	100	100	100	100	100	100

Note: for UK males, the 10-year transitions are based on low numbers

Table 1 describes the transition rate from part-time employment to various competing exit states – full time employment – self-employment, unemployment, and inactivity – from one year to the other as well as for the ten year period. The transition rates presented in the table reflect the differences in average duration of part-time employment among the three countries as described in Figure 1. After one-year, almost 80 percent of Dutch part-time workers are still employed part-time. In the UK, 73 percent is still employed in a part-time job one year later. In Germany, after one year 30 percent have left part-time work. Over a ten-year period, a little less than 60 percent have left part-time employment in the UK and Germany, whereas only half of the employed in part-time work have left it in the Netherlands. Women in the Netherlands seem to prefer part-time jobs for which reason they tend to stay in part-time work even after a period of 10 years of time.

It is also clear from table 1 that these averages mask substantial differences between males and females. Males, in all countries, are more likely to leave part-time employment because they consider it a transitory stage and not the type of job they prefer. Both, in the one-year and the ten-year time frame the gender differential in staying in part-time employment is largest in the UK and Germany. It might simply reflect differences in preferences for part-time labour but it might also reflect the quality of the part-time job to be different across the three countries in such a sense that part-time jobs in the UK and Germany are considered 'bad' jobs because they pay less and offer fewer opportunities to make a career whereas in the Netherlands they are not conceived to be very much

different from full-time jobs. Another noticeable dissimilarity pertains to the transitions to unemployment and inactivity: in Germany more part-timers (males and females) do make such a transition than in the UK and the Netherlands.

5. Results of our model estimations to explain transitions out of part-time employment

Competing risks model
Similar to what has been done in the previous paper (Fouarge and Muffels, 2006) here we again examine the movements out of part-time employment into various competing statuses (non-employment, part-time employment and full-time employment) but in an different time horizon. To explain the transitions we employ competing risks models which allow for distinguishing between the various origin and destination states and which also permit to examine to what extent the transitions over time are dependent on the duration of employment in the part-time job. We thus measure the probability that the transition will occur in the period from now to five or ten years later, given that it has not occurred already up to time *t*. [4]

Table A1 (in Appendix) summarizes the variables used in the models. All the variables included in the models are created in such a way that they are fully comparable across the three countries. Although all variables were included in our estimations, we are not discussing all estimates at length but we focus mainly on the variables for duration dependency, gender and household type.

Duration dependence
The model estimated for the Netherlands, the UK and Germany are presented in Tables 2a, 2b and 2c, respectively. Looking at the effect of the duration dependency of part-time on the exit out of a part-time employment into the various statuses, we find negative effects for all types of transitions in all the three countries in the short and medium term (1 and 5 years transitions). It means that the longer the stay in a part-time job the less likely one is to move out of it in the one or five year period: one is less likely to make a transition out of paid employment, but one is also less likely to increase the number of hours worked into a full-time job.

The longer the time horizon is, the smaller the negative effect of duration becomes. It even becomes insignificant after ten years in the UK but not in the Netherlands and Germany. Although the ten year results for the UK should be taken with caution due to the rapidly decreasing number of observations as the observation window increases, this could mean that after ten years part-timers are as likely to be working full-time as part-time. In the Netherlands and Germany this is not the case: even after ten years, part-

[4] Following Stevens (1999) and Jenkins and Rigg (2001) we specify a discrete time hazard rate model, which estimates the probability of making a transition from temporary employment into the other statuses and its dependence on elapsed time. We will use the standard Weibull specification for the distribution of the time dependency of the hazard rate. The models are only estimated for the transitions into another status during the period five (*t*+5) and ten years later (*t*+10).

timers are still more likely to have remained in part-time employment. The negative duration dependence is found to be larger in Germany than in the Netherlands.

Females and care
We also find that females in a couple with no children who work part-time are less likely to move into full-time employment, compared to males (see Box 1 for an explanation on the interpretation of the model estimates). In the Netherlands and Germany, this effect becomes stronger over time. In the UK, the effect is strongest for exits within five years. The effect is a bit stronger in the Netherlands supporting the idea that women have stronger preferences for part-time work. Females with young children are even less likely to make a transition to full-time employment within a one or five years time frame in the Netherlands and Germany. This additional effect of having children even persists after ten years in Germany. In Germany, having children in the age range 6 to 15, also has an additional effect on reducing the probability of a transition within the one and five years period. Only when the children are old enough and have left the household does the effect of motherhood disappear. In the UK, however, the effect of young children on the transition to full-time employment is only significant in the short term.

The number of children has the expected effect to reduce the transition into full-time work at least in Germany within the one and five-year window. For the UK, this effect is only significant in the one-year window. In the five- and ten-year window in the UK and the Netherlands, the sign for the number of children turns to be positive. The positive effect is also stronger after ten years than after five years. This points to the effect of children growing older and leaving the home which makes it easier for women as well as men to enter a full-time job.

Box 1: Interpretation of the model estimates

Because we introduce an interaction effect between gender and household type in the model the effects have to be interpreted relative to the main effect for males living in a couple without children. This means that the effects for the household type are relative to that main effect. For example, Dutch males who work part-time and live in a couple with young children (below 6 years of age) have a lower probability of making an exit to full time employment within a year (beta = –0.210; Table 2a) compared to males without children but this effect is not significant. The effect of 'female' then corresponds to the probability of a female living in couple without children to exit part-time employment, relative to males. In the Netherlands, for example, this effect is negative and significant for exit within one year (beta = –1.101; Table 2a). The effects for the other household types for females are additional to this main effect. So for Dutch females in a couple with young children the likelihood that they leave part-time employment within one year is even larger than for females without children, compared to males without children (beta = –1.101 – 1.131).

Other covariates
We observe that the higher the educational level, the higher the chance to move into full-time work. Similarly, the chance to move to unemployment is lower as the educational

level is higher, which effect makes sense from a human capital perspective. It is slightly puzzling why the effect is absent – and even reversed – in Germany for movements into full-time jobs whereas it is present for movements into self-employment. The latter is also the case in the UK but not in the Netherlands. The effect is even stronger after five years in all countries but insignificant after ten years.

By industrial sector we observe the strongest effect for the public sector exhibiting a negative effect on all movements out of a part-time job. Hence, people working in a part-time job in the public sector tend to stay in a part-time job. The effect becomes smaller over time and appears insignificant after ten years in the Netherlands and the UK but not in Germany where the effect remains strong over time.

The number of employed in the household has a positive effect on moving into full-time employment within one year in the UK but a negative effect in Germany. The negative effect in Germany becomes smaller after five years and it disappears after ten years. In the UK and the Netherlands, the number of employed persons in the household also reduces the probability of an exit to inactivity or unemployment (but not in Germany). Hence, in these two countries, the labour market attachment of other household members contribute to one remaining in the labour force. The effect for Germany might indicate that there is less economic need to work full-time if there are more employed persons in the household.

The effect of year reflects the role of the business cycle in affecting the transitions on the labour market. The positive effects in the UK for the movement into full-time jobs and into self-employment reflect the economic upturn period and the good performance of the labour market during the years under scrutiny. Also in the Netherlands we observe in quite some years a positive effect for the transitions into full-time employment whereas in Germany, in most years, these effects are negative suggesting that the employment prospects for part-timers is not particularly favourable. On the other hand the findings also show that the likelihood of becoming unemployed or making an exit to inactivity is also lower which effects persist over time for the early 1980s and the mid 1990s.

Table 2a: Competing risks model for exit from part-time employment (t–t+1, t – t+5, t – t+10), the Netherlands

	Exit after 1 year				Exit after 5 years				Exit after 10 years			
	Full-time	Self-empl.	Unempl.	Inactive	Full-time	Self-empl.	Unempl.	Inactive	Full-time	Self-empl.	Unempl.	Inactive
Duration of part-time (ln)	-0.499**	-0.922**	-0.596**	-0.470**	-0.258**	-0.566**	-0.435**	-0.208**	-0.236**	-0.137	0.119	-0.159*
Female	-1.101**	-0.310	-0.065	0.161	-1.662**	-0.843**	0.145	0.035	-2.343**	-0.332	0.242	0.144
Household type (ref: Couple, no child)												
Couple, youngest child 0-5	-0.210	-0.523	-0.404	-0.847**	-0.533**	-0.157	-0.262	-0.857**	-0.508	1.059	-0.361	0.075
Couple, youngest child 6-15	-0.269*	-0.294	-0.273	-0.362*	-0.509**	0.250	-0.182	-0.363	-0.419	0.766	.	-0.720
Single, no child	-0.204	0.387	0.392	0.316*	0.339*	0.745	1.135**	-0.739**	0.486	1.535*	0.458	-0.655
Other (incl single with children)	-0.212	.	-0.410	0.497	-0.705	.	0.851	-1.253*	0.586	.	3.439*	.
Female * household type												
Couple, youngest child 0-5	-1.131**	0.663	0.164	1.117**	-1.012**	-0.182	0.022	1.030**	-0.344	-0.878	0.640	-0.062
Couple, youngest child 6-15	-0.216	0.302	-0.019	0.040	0.391*	-0.705	-0.016	-0.302	0.470	-1.058	.	0.350
Single, no child	0.545**	0.034	0.224	-0.595**	0.316	-0.766	-0.568	-0.124	0.460	-1.100	0.307	-0.089
Other (incl single with children)	0.163	0.433	0.520	-0.492	1.304**	.	-0.827	-0.151	0.196	.	-3.215*	.
Number of children 0-15	0.007	0.112	0.109	0.104	0.135*	0.206	0.000	-0.046	0.344**	0.081	-0.044	-0.122
Age	0.050**	0.002	-0.012	-0.279**	-0.126**	-0.010	-0.053	-0.333**	-0.225**	-0.155	-0.063	-0.388**
Age-squared (*0.01)	-0.001**	0.000	0.000	0.004**	0.001**	0.000	0.001	0.005**	0.002**	0.002	0.000	0.006**
Education (ref: low)												
High school	0.142*	-0.195	-0.345**	0.005	0.197**	0.504**	-0.125	-0.136*	-0.069	0.281	-0.618*	-0.443**
More than High school	0.425**	0.136	-0.057	-0.095	0.785**	0.815**	-0.468	-0.153	0.415*	0.194	-0.630	-0.375*
ISEI	0.014**	0.008	-0.013**	-0.014**	0.012**	0.007	-0.012*	-0.014**	0.014**	0.016	-0.002	-0.016**
Sector of occupation (ref: industry)												
Primary	-0.124	0.204	-0.266	0.380*	0.188	0.365	-0.157	0.149	0.060	1.222	-32.377	0.275
Commercial services	-0.051	-0.306	0.091	0.008	-0.049	0.235	-0.244	0.120	-0.157	0.079	-0.305	0.060
Non-commercial services	-0.128	0.026	-0.289	-0.173	-0.380**	0.620*	-0.548*	-0.027	-0.515**	0.147	-1.386**	-0.009
Public services	-0.088	-0.951**	-0.636**	-0.449**	-0.209	-0.319	-0.646*	-0.338**	-0.229	-0.498	-0.954	0.013
Number of employed in household	-0.034	-0.106	-0.213*	-0.162**	0.071	-0.102	-0.022	-0.305**	0.241**	0.418*	0.184	-0.266**
Year (ref: 1991)												
1984	-0.395	.	-0.063	0.756**	0.047	0.003	0.155	0.816**	-0.390	-1.146	0.962	0.667*
1985	-0.649*	.	-0.197	-0.159	0.198	0.700	0.057	0.249	-0.236	1.035*	0.016	0.474
1986	0.867**	-1.778	0.320	0.441*	0.319	1.116**	0.596	0.330	-0.145	1.097*	0.804	0.357
1987	0.479**	-0.880	0.327	0.311	-0.143	0.733	0.038	0.328	-0.399	0.508	-0.013	0.289
1988	0.578**	-0.369	0.466	0.389*	0.051	0.319	0.159	0.160	-0.174	0.247	0.361	0.484*
1989	-0.178	-0.669	0.003	-0.027	-0.136	0.161	0.028	0.189	-0.017	0.142	0.220	0.191
1990	0.208	0.533	0.040	0.475**	0.018	-0.173	-0.296	0.272*	-0.023	0.133	0.522	0.248
1992	0.013	0.017	0.346	0.107	-0.087	-0.032	-0.343	0.044	-0.187	0.226	0.432	0.102
1993	-0.033	-0.701	0.038	0.122	-0.117	-0.060	-0.391	0.027				
1994	0.384**	-0.226	0.075	0.149	-0.032	0.091	-1.085**	0.058				
1995	0.074	-0.744	-0.610*	-0.042	0.005	0.503	-0.346	0.056				
1996	0.300*	-0.611	-0.475	-0.001	-0.025	0.324	-0.724*	-0.136				
1997	0.413**	-0.804	-0.462	0.039	-0.062	0.034	-0.675*	-0.013				
1998	0.193	-0.285	-0.955**	0.226								
1999	0.309*	-0.627	-0.569	0.051								
2000	0.263	-0.940*	-0.571	-0.142								
2001	0.426**	-0.464	-0.989**	0.055								
Constant	-1.862**	-3.655**	-1.178	3.301**	2.719**	-3.345**	-0.512	5.031**	4.689**	-1.842	-1.880	5.461**
Pseudo R-squared	0.107				0.172				0.213			
N	20735				11270				4010			

* p<0.05, ** p<0.01

Note: coefficients are not reported (.) when they are based on too few observations.

Table 2b: Competing risks model for exit from part-time employment (t–t+1, t – t+5, t – t+10), the UK

	Exit after 1 year				Exit after 5 years				Exit after 10 years			
	Full-time	Self-empl.	Unempl.	Inactive	Full-time	Self-empl.	Unempl.	Inactive	Full-time	Self-empl.	Unempl.	Inactive
Duration of part-time (ln)	-0.781**	-0.707**	-0.581**	-0.507**	-0.353**	-0.536**	-0.510**	-0.478**	-0.075	-0.090	-0.880	-0.413*
Female	-0.886**	-0.224	-1.286**	0.071	-1.738**	-1.721**	-1.692**	-0.427	-1.284*	-1.988**	-0.912	-0.102
Household type (ref: Couple, no child)												
Couple, youngest child 0-5	0.456	0.148	-0.081	-0.227	-0.335	-0.554	-1.079	-1.215	.	.	.	.
Couple, youngest child 6-15	0.471	0.345	-0.218	0.283	0.231	-0.319	0.870	-0.554	.	.	-1.229	-0.169
Single, no child	0.492*	-0.783	0.519	0.230	-0.234	-0.317	-0.901	-1.229*	0.289	-0.547	0.762	-1.395
Other (incl single with children)	0.516	1.289*	-0.589	1.004*	0.576	0.396	-0.052	0.601	-0.518	-0.251	.	-1.346
Female * household type												
Couple, youngest child 0-5	-1.511**	-0.799	-0.858	0.478	-0.621	-0.325	-0.345	0.616	.	.	.	.
Couple, youngest child 6-15	-0.440	-0.604	-0.338	-0.424	-0.249	-0.523	-1.432*	-0.381	.	.	.	.
Single, no child	0.014	0.539	-0.355	-0.457	1.046*	0.731	0.683	1.021	-0.022	0.057	0.583	1.132
Other (incl single with children)	-0.536	-1.488*	0.548	-1.038*	-0.349	-1.192	-0.173	-0.885	0.973	0.417	.	2.009
Number of children 0-15	-0.151**	0.158*	0.014	0.036	0.160**	0.160	0.018	0.148*	0.397**	0.160	0.292	-0.107
Age	-0.035	0.011	-0.078*	-0.317**	-0.076*	0.027	-0.106	-0.383**	0.010	0.197	-0.225	-0.453**
Age-squared (*0.01)	0.000	0.000	0.000	0.004**	0.000	-0.001	0.001	0.005**	-0.001	-0.003	0.002	0.007**
Education (ref: low)												
High school	0.184*	-0.049	-0.141	0.077	0.319**	0.068	-0.019	-0.175*	0.261	0.571	-0.311	-0.199
More than High school	0.435**	0.360*	-0.276	0.106	0.482**	0.699**	-0.093	0.071	0.463*	1.246**	0.013	-0.002
ISEI	0.013**	0.004	-0.007	-0.004	0.006*	0.006	-0.005	-0.003	0.014**	0.008	0.021	0.000
Sector of occupation (ref: industry)												
Primary	-0.087	-0.567	0.378	-0.233	-0.566	-1.101	-0.628	-0.764	-1.360	2.213	.	0.158
Commercial services	-0.447**	-0.073	-0.229	-0.009	-0.409**	-0.059	-0.894**	-0.230	-0.066	1.143*	0.158	-0.310
Non-commercial services	-0.330**	-0.036	-0.362	0.050	-0.317*	-0.030	-1.167**	-0.282	0.132	0.907	-0.170	-0.368
Public services	-0.381**	-0.800**	-0.925**	-0.348**	-0.254*	-0.909**	-1.441**	-0.506**	0.040	0.343	-0.772	-0.651**
Number of employed in household	0.178**	0.003	-0.243*	-0.188**	0.095	0.066	-0.253	-0.137*	0.002	0.359*	-0.003	-0.157
Year (ref: 1991)												
1992	0.433**	0.398	0.228	-0.181	0.227	0.099	0.305	0.112	-0.079	0.136	0.987	0.046
1993	0.581**	0.688*	0.584	0.085	0.350*	0.354	-0.132	0.266	0.028	0.098	1.432*	0.230
1994	0.797**	0.887**	0.451	-0.046	0.407**	0.180	-0.201	0.423**				
1995	0.745**	0.603*	0.554	-0.076	0.535**	0.362	0.507	0.504**				
1996	0.784**	0.711**	-0.174	-0.010	0.446**	0.257	0.047	0.414**				
1997	0.710**	0.294	0.051	-0.019	0.470**	-0.219	0.296	0.556**				
1998	0.858**	0.583*	0.340	0.302*	0.397**	0.206	0.160	0.625**				
1999	0.711**	0.810**	0.382	-0.082								
2000	0.730**	0.354	0.366	0.022								
2001	0.782**	0.592*	0.205	0.121								
2002	0.588**	0.542*	0.128	-0.093								
Constant	0.132	-2.616**	1.445	4.825**	2.805**	-0.802	3.283*	6.928**	1.269	-5.182*	1.718	7.734**
Pseudo R-squared	0.106				0.110				0.150			
N	12476				6073				1833			

* p<0.05, ** p<0.01

Note: coefficients are not reported (.) when they are based on too few observations.

Table 2c: Competing risks model for exit from part-time employment (t–t+1, t – t+5, t – t+10), Germany

	Exit after 1 year				Exit after 5 years				Exit after 10 years			
	Full-time	Self-empl.	Unempl.	Inactive	Full-time	Self-empl.	Unempl.	Inactive	Full-time	Self-empl.	Unempl.	Inactive
Duration of part-time (ln)	-0.929**	-1.038**	-0.584**	-0.606**	-0.530**	-0.472**	-0.275**	-0.383**	-0.300**	-0.459**	-0.316**	-0.360**
Female	-1.049**	-0.685**	-0.422**	-0.387**	-1.597**	-1.537**	-0.439*	-0.031	-1.865**	-1.764**	-0.949**	0.501*
Household type (ref: Couple, no child)												
Couple, youngest child 0-5	0.534**	0.250	-0.051	-0.562	0.302	0.266	0.480	-0.287	-0.107	0.202	-0.523	0.523
Couple, youngest child 6-15	0.745**	0.080	-0.293	-0.412	0.570*	0.263	0.424	0.352	0.289	0.127	-0.165	0.147
Single, no child	-0.270*	0.652*	0.079	-0.005	-0.173	0.016	0.433	0.092	-0.474	-0.224	-0.112	0.451
Other (incl single with children)	0.098	0.173	-0.207	0.249	0.073	0.372	0.282	-0.024	0.804	1.391*	0.013	1.026
Female * household type												
Couple, youngest child 0-5	-1.532**	-0.567	-0.394	0.700*	-1.392**	-0.660	-1.167*	0.106	-0.833*	-0.394	-0.241	-1.135
Couple, youngest child 6-15	-1.124**	-0.211	0.015	0.248	-0.949**	-0.858*	-0.730	-0.648*	-0.449	-0.201	-0.510	-0.637
Single, no child	0.763**	-0.741	0.142	0.020	0.999**	1.011*	-0.167	-0.083	1.437**	1.566**	-0.181	-0.772
Other (incl single with children)	-0.123	-0.863	0.108	-0.537*	0.051	-0.945	-0.315	-0.145	-0.299	-1.540*	-0.051	-1.118
Number of children 0-15	-0.185**	0.095	0.027	0.061	-0.090*	0.195*	-0.090	0.091	-0.024	0.123	0.184	-0.044
Age	0.067**	-0.066	-0.083**	-0.434**	0.013	-0.082	-0.182**	-0.673**	0.119*	-0.149	-0.004	-0.681**
Age-squared (*0.01)	-0.112**	0.076	0.102**	0.512**	-0.088**	0.050	0.238**	0.865**	-0.243**	0.150	0.056	0.970**
Education (ref: low)												
High school	-0.253**	0.493**	-0.235*	-0.184**	-0.313**	0.480**	-0.184	-0.234**	-0.351**	0.539*	-0.428**	-0.186
More than High school	0.096	0.891**	-0.332*	-0.107	-0.152	0.438	-0.334	-0.237*	-0.426**	0.248	-0.971**	-0.108
ISEI	0.009**	0.013**	-0.015**	-0.010**	0.010**	0.017**	-0.018**	-0.006**	0.012**	0.015**	-0.011*	-0.007*
Sector of occupation (ref: industry)												
Primary	0.259	0.177	0.164	0.219	0.284	0.775*	-0.346	-0.049	0.635*	0.893*	-0.415	0.554
Commercial services	-0.497**	0.069	-0.344**	0.005	-0.509**	-0.185	-0.458**	-0.032	-0.637**	-0.300	-0.233	-0.233
Non-commercial services	-0.526**	0.334*	-0.344**	0.159*	-0.426**	0.594**	-0.637**	0.119	-0.309**	0.578**	-0.395*	0.105
Public services	-0.357**	-1.047**	-0.815**	-0.262**	-0.444**	-0.507**	-1.079**	-0.332**	-0.632**	-0.059	-0.919**	-0.281*
Number of employed in household	-0.145**	0.243**	-0.164**	-0.057	-0.114**	0.113	-0.126*	-0.107**	-0.027	0.074	0.054	-0.103
East German	0.828**	-0.254	1.390**	0.024	0.785**	0.006	1.526**	0.274**	0.653**	0.006	1.493**	0.349**
Year (ref: 1991)												
1984	-0.149	0.030	-0.679**	-0.716**	0.147	-0.060	-0.801**	-0.573**	-0.216	-0.559	0.360	0.009
1985	0.152	-0.020	-0.621*	-0.676**	0.277	-0.353	-0.772*	-0.488*	-0.312	-0.458	-0.067	0.063
1986	0.261	-0.324	-1.490**	-0.744**	0.165	-0.398	-1.179**	-0.564**	-0.278	-0.279	0.079	0.081
1987	-0.063	-0.239	-0.848*	-0.537*	0.319	-0.129	-0.896*	-0.362	-0.418*	-0.224	-0.037	0.158
1988	0.561**	0.300	-0.982*	-0.047	0.536**	0.199	-0.311	-0.087	-0.169	-0.092	0.626*	0.121
1989	-0.038	0.382	-1.364**	-0.138	0.056	0.532	-0.217	0.036	-0.222	0.229	0.286	-0.074
1990	-0.313*	0.395	-0.910**	-0.262	-0.072	0.209	-0.333	-0.075	-0.443**	0.141	0.038	-0.088
1992	-0.120	0.590	-0.129	0.125	-0.056	0.419	-0.173	-0.055	-0.190	0.254	0.244	0.117
1993	-0.391**	0.618	-0.063	-0.081	-0.287	0.049	-0.146	-0.020	-0.321*	-0.107	0.469	0.054
1994	-0.455**	-0.304	-0.656**	-0.389*	-0.098	0.338	-0.218	-0.401**	-0.385*	-0.203	0.224	-0.214
1995	-0.381**	0.368	-0.332	-0.176	0.080	0.168	-0.264	-0.364*	-0.466**	-0.141	0.209	-0.180
1996	-0.273	-0.113	-0.412	-0.122	-0.007	-0.085	-0.506*	-0.362*				
1997	-0.392**	0.031	-0.384	0.068	-0.069	-0.040	-0.185	-0.390**				
1998	-0.274*	-0.083	-0.738**	-0.415**	-0.034	-0.334	-0.246	-0.434**				
1999	-0.105	0.281	-0.696**	-0.393*	-0.053	-0.049	-0.271	-0.611**				
2000	-0.685**	-0.605	-0.976**	-0.405**	-0.525**	-0.504	-0.572**	-0.701**				
2001	-0.575**	-0.859*	-0.568**	-0.313*								
2002	-0.536**	-0.328	-0.422*	-0.407**								
2003	-0.459**	-0.054	-0.476**	-0.429**								
2004	-0.506**	-0.111	-0.573**	-0.412**								
Constant	-0.166	-2.543**	1.177*	8.266**	2.243**	-0.088	3.574**	12.325**	0.874	1.713	-0.733	10.928**
pR^2	0.143				0.160				0.170			
N	22715				12073				5443			

* p<0.05, ** p<0.01

6. Scarring effect of part-time employment on future wage

6.1 Descriptives

In Table 3 below we show the gross hourly wage of employed males and females in the Netherlands, the UK and Germany after one and ten years in their careers. Table 3 also presents a breakdown according to the current state of part-time employment as well as the past history of part-time employment. That is, we take the traditional full-time career as the point of reference (always full-time) and we compare the hourly wages of workers who were not employed full-time during the past ten years. They either worked full-time now and ten years later but worked part-time occasionally in the years between, they

worked part-time at $t = 1$ but full-time ten years later, or they worked part-time at $t = 1$ and part-time ten years later.

The table shows that overall, male and female full-time workers saw their hourly wages rise more than workers of the same gender with a part-time work history. We also see that females working part-time generally earn less than females in full-time employment. For males, this is not always the case. The reason for this is that males, when they work full-time, work on average more hours (than full-time working females), which reduces their hourly wage accordingly.

Table 3: Hourly wage according to current number of hours worked and past part-time history, t1 and t10

The Netherlands	Males			Females		
	wage t1	wage t10	growth	wage t1	wage t10	growth
Allways full time	16.3	19.6	21%	13.3	16.8	27%
Full time t1 & t10, some part-time	15.9	19.9	25%	12.3	16.1	31%
Part-time t1 & full-time t10	16.2	16.8	3%	12.8	14.8	15%
Part-time t1 & part-time t10	18.7	22.3	20%	13.5	15.0	11%
Total	16.3	19.5	19%	13.3	15.3	15%

UK	Males			Females		
	wage t1	wage t10	growth	wage t1	wage t10	growth
Allways full time	8.4	11.2	34%	6.8	9.64	42%
Full time t1 & t10, some part-time	7.0	9.0	29%	6.31	9.25	47%
Part-time t1 & full-time t10	11.2	10.0	-11%	6.22	7.47	20%
Part-time t1 & part-time t10	21.4	9.9	-54%	5.73	6.88	20%
Total	8.49	11.09	31%	6.25	8.12	30%

Germany	Males			Females		
	wage t1	wage t10	growth	wage t1	wage t10	growth
Allways full time	17.2	20.5	19%	13.3	16.1	21%
Full time t1 & t10, some part-time	18.4	21.2	15%	13.6	16.6	22%
Part-time t1 & full-time t10	32.0	20.3	-37%	15.0	13.9	-8%
Part-time t1 & part-time t10	21.2	23.0	8%	12.3	13.8	12%
Total	17.9	20.6	15%	13.2	14.9	13%

6.2 Estimation of the evolution of hourly wages over time

We have estimated two models for explaining the current hourly wage level as a function of the part-time work history as well as the hourly wages ten years earlier and a number of control variables.

In the first model (Model 1), we relate the current hourly wage (in natural logarithm) to the current part-time employment status, the part-time employment history in the past ten years (number of times worked part time in the last ten years), the wage level ten years earlier, and a number of control variables. We also included the current occupational level.

In the second model (Model 2), we restrict the sample to include only people who were employed full-time in the past five years, and we relate the current hourly wage to their part-time history in the five years prior to their entry in full-time employment. This means that whereas Model 1 estimates the overall effect of past part-time work on the current wage, Model 2 focuses on the effect after a successful re-entry into full-time employment. The models were estimated for males and females separately and the estimates are reproduced in Tables 4a-4c.[5]

The main conclusions to be drawn for the Netherlands (Table 4a) is that there is a sizeable effect of the part-time work history on the current hourly wage for males as well as for females. The more years males or females have worked in a part-time job in the last ten years the lower their wage level. After having worked for at least five years in full-time employment there is still a negative effect of past part-time work for males, but remarkably so not for females. The gross hourly wage for males is reduced by some 2.7% per year of part-time employment.[6] Note, however, females working full-time is not the standard employment pattern in the Netherlands. This implies that our results are likely to be based on a selective group of employed females. If our estimates are not biased because of this it also suggests that part-time jobs are not too 'bad' compared to full-time jobs in the Netherlands. The control variables show that education pays off for males as well as for females, although the returns to education are slightly larger for males.

Similar conclusions can be drawn from the findings for the UK. The adverse effects of having worked part-time in the past ten years on the hourly wage are even stronger than in the Dutch case, especially for males, but also for females. When males working part-

[5] The model is an ordinary least squared wage regression.

[6] We calculate this as exp(-0.027) - 1 = 2.7%.

time do return to a full time job and stay in full-time employment for the five following years, the negative effect of part-time work experience on the wage level disappears for males. That is not the case for females although the negative effect becomes smaller. Each year in part-time employment is estimated to reduce the gross hourly wage of a full-time working British female by 2.3%. The findings therefore confirm the existence in the UK of a scarring effect of part-time work history for females, even after their return into full time employment.

Table 4a: Wage regression for hourly wage in t, according to current and past part-time history (columns 1 and 2); wage regression for hourly wage in t for people employed full-time at least 5 years, according to past part-time history (columns 3 and 4), Dutch males and females

	Model 1		Model2	
	Wage (ln) in t		Wage (ln) in t, after 5 years in full-time employment	
	Males	Females	Males	Females
ln(wage in t-10)	0.317**	0.163**	0.290**	0.160**
Working part-time in t	0.226**	0.145**	-	-
Number of years worked part-time (t-10-t-1)	-0.020**	-0.024**	-0.027**	-0.003
Household type (ref: Couple, no child)				
Couple, youngest child 0-5	-0.009	-0.055	-0.008	0.047
Couple, youngest child 6-15	-0.001	0.001	0.006	0.161
Single, no child	-0.059**	0.036	-0.049*	0.023
Single parent, youngest child 0-5	-0.175**	-0.062	.	.
Single parent, youngest child 6-15	-0.067	0.021	-0.029	0.162*
Other	0.028	0.170**	0.054	0.032
Number of children 0-15	0.008	0.038	0.008	-0.081*
Age	-0.008	0.021	-0.005	0.026
Age-squared (*0.01)	0.000	0.000	0.000	0.000
Education (ref: low)				
High school	0.058**	0.071**	0.056**	0.094*
More than High school	0.177**	0.139**	0.169**	0.133**
ISEI	0.007**	0.006**	0.008**	0.007**
Sector of occupation (ref: industry)				
Primary	0.032	-0.011	0.052	-0.147
Commercial services	0.004	0.034	0.007	0.039
Non-commercial services	0.003	0.046	0.030	0.019
Public services	-0.027	0.082**	-0.005	0.055
Number of employed in household	0.004	0.002	0.003	-0.049
Year (ref: 2001)				
1994	-0.015	-0.041	-0.015	-0.042
1995	-0.005	-0.104**	-0.006	-0.055
1996	-0.053**	-0.096**	-0.044*	-0.050
1997	-0.065**	-0.080**	-0.060**	-0.057
1998	-0.063**	-0.076**	-0.059**	-0.036
1999	-0.112**	-0.097**	-0.111**	-0.058
2000	-0.137**	-0.055	-0.116**	-0.093*
Constant	1.831**	1.522**	1.788**	1.415**
R-squared	0.369	0.260	0.400	0.440
N	6552	2907	5683	642

* p<0.05, ** p<0.01

Note:
Variables not included in the model are marked with '-'.
Coefficients are not reported (.) when they are based on too few observations.

Table 4b: Wage regression for hourly wage in t, according to current and past part-time history (columns 1 and 2); wage regression for hourly wage in t for people employed full-time at least 5 years, according to past part-time history (columns 3 and 4), UK males and females

	Model 1		Model 2	
	Wage (ln) in t		Wage (ln) in t, after 5 years in full-time employment	
	Males	Females	Males	Females
ln(wage in t-10)	0.470**	0.353**	0.493**	0.446**
Working part-time in t	0.310**	0.142**	-	-
Number of years worked part-time (t-10-t-1)	-0.063**	-0.034**	-0.046	-0.023*
Household type (ref: Couple, no child)				
Couple, youngest child 0-5	0.097**	0.028	0.093*	0.002
Couple, youngest child 6-15	0.040	-0.002	0.029	0.036
Single, no child	-0.036	0.028	-0.046	0.004
Single parent, youngest child 0-5	.	0.331	.	0.044
Single parent, youngest child 6-15	-0.004	0.061	0.009	0.041
Other	-0.028	0.009	-0.030	0.077
Number of children 0-15	-0.001	0.019	-0.001	-0.008
Age	-0.006	0.001	-0.018	0.013
Age-squared (*0.01)	0.000	0.000	0.000	0.000
Education (ref: low)				
High school	0.022	0.031	0.025	0.043
More than High school	0.083**	0.121**	0.065**	0.150**
ISEI	0.010**	0.008**	0.009**	0.007**
Sector of occupation (ref: industry)				
Primary	0.077	0.178**	0.078	0.117
Commercial services	-0.045*	-0.077*	-0.035	-0.041
Non-commercial services	-0.074*	-0.037	-0.081*	-0.011
Public services	-0.035	0.092**	-0.024	0.039
Number of employed in household	-0.015	-0.004	-0.011	0.004
Year (ref: 2001)				
2000	-0.016	-0.033*	-0.008	-0.032*
2002	0.043**	0.016	0.043**	0.016
2003	0.051**	0.044**	0.054**	0.051**
Constant	1.393**	1.415**	1.594**	1.041**
R-squared	0.577	0.554	0.596	0.542
N	2666	2227	2539	1171

* p<0.05, ** p<0.01

Note:
Variables not included in the model are marked with '-'.
Coefficients are not reported (.) when they are based on too few observations.

Table 4c: Wage regression for hourly wage in t, according to current and past part-time history (columns 1 and 2); wage regression for hourly wage in t for people employed full-time at least 5 years, according to past part-time history (columns 3 and 4), German males and females

	Model 1		Model 2	
	Wage (ln) in t		Wage (ln) in t, after 5 years in full-time employment	
	Males	Females	Males	Females
ln(wage in t-10)	0.453**	0.412**	0.474**	0.455**
Working part-time in t	0.182**	0.162**	-	-
Number of years worked part-time (t-10-t-1)	-0.020**	-0.027**	-0.061**	-0.043**
Household type (ref: Couple, no child)				
Couple, youngest child 0-5	0.023	-0.037	0.027	-0.073
Couple, youngest child 6-15	0.003	-0.007	0.003	-0.031
Single, no child	-0.035*	0.004	-0.030	-0.004
Single parent, youngest child 0-5	.	-0.131	.	0.024
Single parent, youngest child 6-15	-0.047	0.054	-0.044	-0.123
Other	0.014	-0.049	0.015	-0.082**
Number of children 0-15	0.010	0.028	0.011	0.054*
Age	0.023**	0.050**	0.017**	0.041**
Age-squared (*0.01)	-0.030**	-0.060**	-0.024**	-0.051**
Education (ref: low)				
High school	0.053**	0.018	0.049**	0.034
More than High school	0.152**	0.049	0.143**	0.069*
ISEI	0.008**	0.008**	0.008**	0.008**
Sector of occupation (ref: industry)				
Primary	-0.042	0.099	-0.043	0.116
Commercial services	-0.045**	-0.024	-0.043**	0.010
Non-commercial services	-0.019	-0.017	-0.003	-0.025
Public services	-0.101**	0.083**	-0.101**	0.019
Number of employed in household	-0.021**	-0.012	-0.018**	0.001
East	-0.151**	-0.094**	-0.142**	-0.087**
Year (ref: 2001)				
1993	0.048**	0.048*	0.050**	0.035
1994	0.037*	0.025	0.039**	-0.004
1995	0.050**	0.063**	0.049**	0.046
1996	0.039**	0.052*	0.039**	0.034
1997	0.012	0.015	0.013	0.034
1998	0.014	0.019	0.012	-0.017
1999	0.019	0.005	0.013	-0.018
2000	0.004	0.020	0.004	0.021
2002	0.027*	0.011	0.026*	0.014
2003	0.024*	0.036	0.021	0.023
2004	0.021	0.015	0.017	0.000
Constant	0.883**	0.271	0.957**	0.365
R-squared	0.494	0.378	0.505	0.380
N	11490	6003	10959	3650

* p<0.05, ** p<0.01

Note:
Variables not included in the model are marked with '-'.
Coefficients are not reported (.) when they are based on too few observations.

Eventually, we turn to the conclusions of our estimations for Germany. The effect of part-time employment history on the current wage level is negative for males and females. The size of the effect is similar to that in the Netherlands and smaller than in the UK. However, even after having worked five years in full time employment, there is still a sizeable negative effect of part-time work on the wage level. This negative effect is even stronger in the German case than it is in the Netherlands or the UK. It is also larger for males (5.9% per year of part-time employment) than for females (4.2% per year of part-time employment).

8. Conclusions

To summarize these findings and to draw some conclusions we now turn back to the research questions and hypotheses we have formulated earlier. First of all we can conclude that the longer people stay in part-time work the less chances there are to return into full-time employment but that the adverse effects slows down over time. While duration dependence is initially large in the UK, it vanishes after ten years. The effect, however, remains significant even after ten years of time in Germany and the Netherlands. This suggests that in these two countries, contrary to the UK, part-time employment is a steady state.

We also found that females in all three countries have a lower probability of making a transition from part-time employment in the short, medium and long term in all three countries. But again, the effect tends to diminish over time. After ten years, the effect for Dutch females is larger probably because the preference for part-time employment is stronger in the Netherlands compared to the other countries. In addition to that, females with young children have reduced chances to move into full-time employment. In Germany, this effect even persists after ten years, whereas in the UK and the Netherlands this additional effect of children disappears after one and five years, respectively. It must be said also that part-time employed females with young children are more likely to exit to inactivity within one year in the Netherlands and Germany. In Germany and the UK, they are also less likely to move to unemployment.

The results also confirm our hypotheses that there is especially for women a scarring effect of being engaged in part-time employment in the past ten years on the current wage. This scarring effect is present in all countries but more so in the UK than in the Netherlands or Germany, which is not what we expected. The scarring effect on the wage is still present for females who made a successful entry into full-time employment for five years in the UK and Germany (but not in the Netherlands). The scarring amounts to a reduction of the gross hourly wage by 2.3% in the UK and 4.2% in Germany per year worked part-time in the past. For males we did not find such an effect in the UK but we did find it in Germany and the Netherlands. The scarring effect in Germany (5.9%) is twice as large as in the Netherlands (2.7%).

References

Anxo et al., *Working time options over the life course: changing social security structures*, European Foundation, 2005.

Blank, R. "The Role of Part-Time Work in Women's Labor Market Choices Over Time," *American Economic Review*. Vol 79:1, May 1989. p295-99, edited by Gustafson S.S. and Meulders D. New York: Mac Millan/St. Martin's Press.

Chung, H. and R. Muffels. *Contract Flexibility and Working Time Arrangements: constructing a typology*. 2006.

Dekker, R., R.J.A. Muffels, and E. Stancanelli. 2000. "A longitudinal analysis of part-time work by women and men in the Netherlands." Pp. 260-287 in *Gender and the labour market: Econometric evidence of obstacles to achieving gender equality.*, edited by Gustafson S.S. and Meulders D. New York: Mac Millan/St. Martin's Press.

European Commission (2006). *Employment in Europe 2006*. Luxembourg: Office for Official Publications of the European Communities.

Fouarge, D., R. Luijkx, A. Manzoni and R. Muffels (2006). *Careers of working mothers after the birth of a first child*, mimeo, Tilburg University.

Fouarge, D. and R. Muffels (2006),*Working part-time and caring in Europe: short and medium-term effects on the career and income*, mimeo, Tilburg University.

Ganzeboom, Harry B.G., Paul M. De Graaf, and Donald J. Treiman. 1992. "A Standard International Socio-Economic Index of Occupational Status." Social Science Research 21:1-56.

Kenjoh, E. (2003). Women's employment around the birth of the first child in Britain, Germany, The Netherlands, Sweden and Japan. *ISER working papers* June 2003-16.

Muffels, R. & D. Fouarge (2006). *Contract Flexibility and Employment Security in Europe*, mimeo, Tilburg University.

O'Reilly, J. and Bothfeld, S., "What Happens after Working Part Time? Integration, Maintenance or Exclusionary Transitions in Britain and Western Germany", *Cambridge Journal of Economics*, 26(4), 2002, pp. 409-39.

Román, A., Fouarge D. and Luijkx, R., *Career consequences of part-time work: results from Dutch panel data 1990 - 2001*, 2004, Tilburg: OSA-rapport A206

Uunk, W., Kalmijn, M. and Muffels, R., "The Impact of Young Children on Women's Labour Supply: A Reassessment of Institutional Effects in Europe.", *Acta sociologica,* 48, 2005, pp. 41-62.

Van der Lippe, T. (2001) 'The Effect of Individual and Institutional Constraints on Hours of Paid Work of Women: An International Comparison', in T. Van der Lippe and L. Van Dijk (eds.), *Women's Employment in a Comparative Perspective*, pp. 221–43. New York: Aldine de Gruyter.

Visser, J. (2002). The first part-time economy in the world: a model to be followed? *Journal of European Social Policy*, 12 (1), 23-42.

Vlasblom, J. D., & Schippers, J. (2006). Changing dynamics in female employment around childbirth: Evidence from Germany, the Netherlands and the UK. *Work Employment Society*, 20 (2), 329-347.

Appendix

Figure A.1: Participation rate and percentage employees with a part-time contract in West-Germany (percentage)

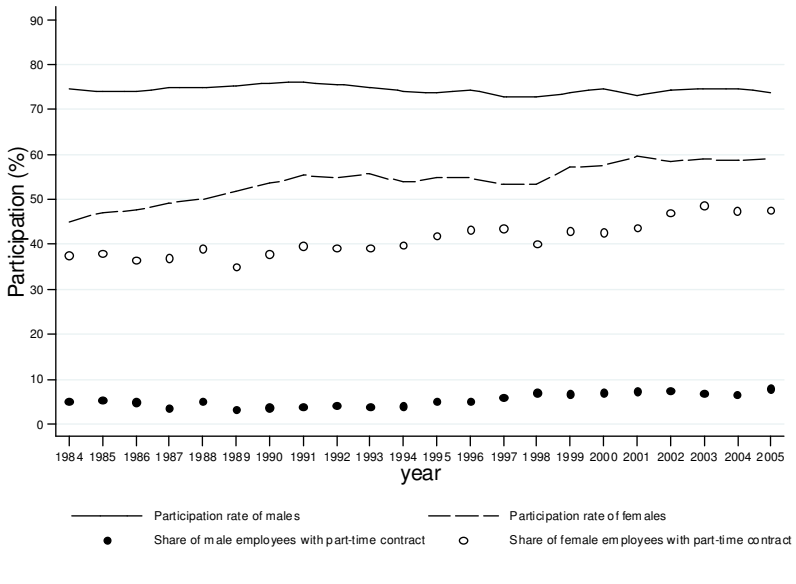


Figure A.2: Participation rate and percentage employees with a part-time contract in East-Germany (percentage)

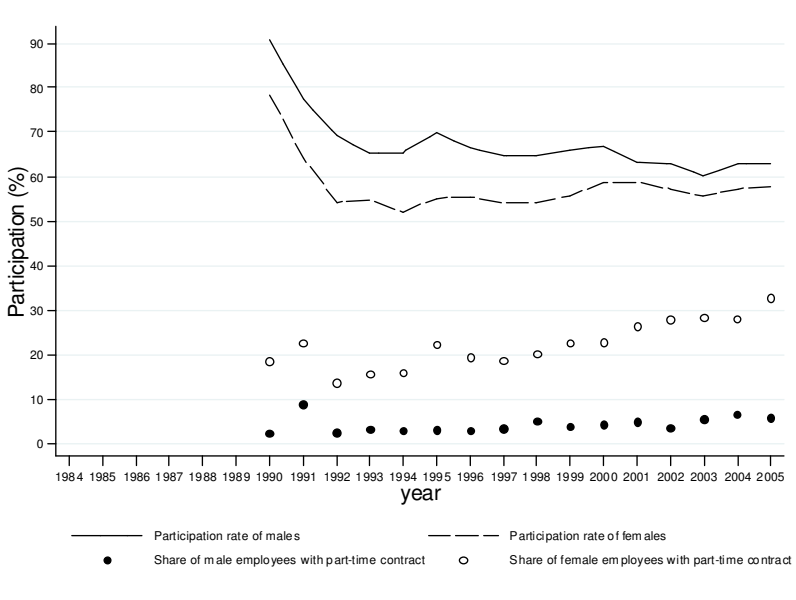


Table A1: Variables entered in the regression models

Variable	Definition	Competing risks model for exit out of part-time employment	Wage equation
Duration of past part-time employment	Number of years worked part-time more than 1 hour but less than 35 hours up to time *t*, natural logarithm	×	
Gender	Dummy variable for females	×	
Household type	Composition of the household at time *t*: couple, no child below 16 years (reference category); couple, youngest child 0-5 years; couple, youngest child 6-15 years; single, no child below 16 years; single parent, youngest child 0-5 years; single parent, youngest child 6-15 years; other		×
Gender * Household type	This variable is the cross-term of gender and the household type variable, where the categories "single parent, youngest child 0-5 years", "single parent, youngest child 6-15 years" and "other" have been regrouped due to data constraints	×	
Number of children	Number of children aged less than 16 years old living in the household at time *t*	×	×
Age	Age in years at time *t*, and age squared (divided by 100)	×	×
Educational level	Highest educational level attained: only lower education (reference category), high school, or more than high school	×	×
Occupational level (ISEI)	Occupational level as measured by the ISEI scale. The ISEI scale is a well accepted instrument that reflects measures of income and education level incumbents to each occupation (Ganzeboom, De Graaf, and Treiman 1992).	×	×
Number of employed persons	Number of employed persons in the household at time *t*	×	×
Industry	Sector of industry one is employed in at time *t*: industry (reference category), primary sector, commercial services, non-commercial services, public services	×	×
Wage level in *t*-10	Gross hourly wage at time point *t*-10, in natural logarithm		×
Part-time	Dummy for working less than 35 hours per week in *t*		×
Year dummies	Dummies for each year of survey.	× (reference year: 1991)	× (reference year: 2001)
East Germany	A dummy for the East German sample is included in the model for Germany only	×	×

Hall, P. and Soskice, D. (ed.), (2001), *Varieties of capitalism: the institutional foundations of comparative advantage*, Oxford: Oxford University Press, pp.