

Flexibility of Working Hours and Job Mobility in Germany: The Role of the Part-Time and Fixed-Term Act

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Abstract

The German Part-Time and Fixed-Term-Act is thought to enhance in particular the flexibility of working hours within jobs. Since the 1.1.2001 employers have to approve if employees request a reduction of their working hours. The paper explores to what extent the Part-Time and Fixed-Term Act was suited to achieve the aim to better balance work and family commitments. Especially in Germany the presence of more than one child, is associated with dropping out of employment. A major reason for women dropping out was the lack of part-time employment opportunities within their jobs. A high proportion of women interested in reducing their working time was actually able to reduce it by means of changing employer. The theoretical framework for the paper involves labour market segmentation theory and the household structure approach to address on the one hand the question how changes in the life circumstances of women influence their working supply decisions and on the other hand to what extent working hours are constrained within jobs, and to what extent working hours can be adjusted by means of changing employer. The aim of this paper is to measure the flexibility of working hours within and between jobs and to evaluate whether the flexibility of working hours was effected by the German Part-Time and Fixed-Term-Act. The empirical analysis bases on a sample of employed women in the German Socio-Economic Panel (1998-2003), i.e. before and after the German Part-Time and Fixed-Term Act became effective. Actually the results of the bivariate probit estimation indicate that indeed changing employer is an important means of adjusting working time and that the German Part-Time and Fixed-Term Act was alleviating the flexibility of working hours.

JEL codes: C20, J22, J60

Keywords: Labour supply, hours restrictions, job mobility

1. Introduction

One crucial draw back of neo-classical labour supply models is the assumption that people can freely choose the number of working hours, that is, observed hours are supposed to equal desired hours. This only holds if there are no hours constraints within jobs and no mobility costs between jobs. However, given this assumption the effect of changes in labour supply preferences on hours will not depend on whether a quit occurs.

There are, in fact, strong theoretical arguments and empirical evidence exists, that working hours cannot be freely varied within jobs, but are instead strongly influenced by employer preferences¹. If jobs consist of fixed hours-wage packages, then changes in labour supply preferences will result in hours changes only if the worker changes jobs. Furthermore, if information about job opportunities is imperfect, workers may not always be able to move to jobs with desired hours. In this case, changes in labour supply preferences will result in actual hours changes only if a job offering with a superior hours-wage package can be found.

Part-time work is often discussed as a means to alleviate reconciliation of family and work. Part-time work constitutes the fact that changing labour supply preferences for example because of specific events in an individual life such as mother- or fatherhood or other family members latterly needing care result in hours changes. Given a frictionless labour market and the assumption that working hours can be freely varied within jobs, reduced working hours quite often should be found if employees become parents or take the responsibility for other family members needing care without changing their employer. However, empirical evidence indicates that many employees with changing labour supply preferences which correspond to part-time work either drop out of the labour market or have to change jobs (O'Reilly/Bothfeld 2002). In order to alleviate particularly the reduction of working hours the government deployed a rather extensive regulation of the labour market in form of the Part-time and Fixed-Term Act. It came into force in January 2001 and gives full-time employees the right to reduce their con-

¹ See Card (1987) for a survey. On the theoretical side, models of labour demand that include worker specific costs as well as nonlinearities in the relationship between hours per worker and output suggest that work hours may be a job characteristic about which firms have particularly strong preferences. On the empirical side, there is evidence to support the view that the constraints placed by firms on hours choice are quantitatively significant. A number of studies indicate that much unemployment reflects constraints on choice of hours of work.

tractual working hours provided they have been working for at least six months in their current firm.¹

A straightforward way to test the hypothesis that job mobility is necessary if changes in preferences are to affect hours is to estimate hours-change equations, allowing the effects of changes in indicators of preferences to vary depending on whether or not a quit occurred. If hours can be freely varied within jobs, the effect of changes in preferences on hours for those who do change jobs should be similar to the effect on hours for those who do not change jobs. Conversely, if hours constraints within jobs are important, then changes in preferences should affect hours more strongly when the job changes than when it does not change. Moreover such tests can be augmented by the hypothesis that the enforcement of the Part-Time and Fixed-Term Act does facilitate a more freely variation of working hours within jobs. For these purposes the determinants of job mobility have to be assigned. As job mobility is a binary variable equal to unity if an employee has changed employer and zero otherwise a probit analysis has to be undertaken. Likewise for estimating the hours-change equation a probit analysis was chosen in order to estimate a recursive model. The appropriate specification for this type of model is the bivariate probit, a simultaneous equations model that controls for the endogeneity of two related choices (Ashford and Snowden 1970; Greene 1993).

2. Theoretical Model

The labour segmentation theory places less emphasis on supply-side factors in explaining why employees are in a particular type of job. Instead, more weight is given to the role of employers and particular forms of labour market regulation in accounting for barriers between different types of employees. According to this approach, employers create internal labour markets with advantaged terms and conditions because they wish to retain core employees (Doeringer and Piore, 1971). This retention strategy is motivated by the employers' previous investment in training and the development of firm-specific skills. It is common to find internal labour markets among large firms using sophisticated technology (Berger and Piore, 1980). Employees' commitment and effort is rewarded with the prospect of career mobility within the firm and beneficial payments. In contrast, inferior terms and conditions, associated with more precarious employment, are offered to those in secondary or external labour markets (Rubery, 1998).

¹ See § 8(1) of the Part-time and Fixed-Term Act (TzBfG) (*Gesetz über Teilzeitarbeit und befristete Arbeitsverträge*), Bundesministerium für Arbeit und Sozialordnung (2000).

The labour market segmentation approach would suggest that working time adjustments can take three possible routes. First, positive working time flexibility associated with employment integration or maintenance would allow employees to shift their working-time arrangements, making it relatively easy for people to move between full-time and part-time jobs. It is usually large firms with developed human-resource management policies that can develop skill-retention strategies for those working in the core internal labour market (Rubery et al. 2000). Small firms are not in the same position to offer these career trajectories and are more likely to use marginal forms of employment. However, the incentive to use marginal, short-hours jobs, where employers can reduce labour costs because they are exempt from, or pay only minimal social contributions, effectively reinforces labour market divisions between the different segments. Marginal jobs are less attractive to core full-time employees; only those outside the labour market, with few other options, may be willing to take up these opportunities. Marginal forms of employment are more often found in smaller firms, and such jobs are likely to generate not only working time adjustments but also employment transitions, which could be paralleled to a revolving-door situation between paid work and non-employment. So the second type of working time adjustment this theory would lead us to expect a increased labour market precariousness and discontinuous patterns of employment, as well as perpetuating divisions between those who are integrated and those who are excluded. At any rate the latter type of working time adjustment in general is not expected to be in line with labour supply preferences of the employee. Last but not least the third type of working time adjustments results often in high job mobility, because many jobs are consisting of fixed-wage packages, i.e. changes in labour supply preferences will result in hours changes only if the employee changes jobs. This situation is rather expected in small and medium sized firms or firms using less sophisticated technology so that they usually do not have to invest in the development of firm-specific skills. To measure the effects of labour market segmentation, we use firm size and sector variables. To distinguish between firms that may be able to offer better human resource career breaks, the variable of firm size was used. This was split into four categories: small firms (up to 20 employees); middle-sized firms (20-200 employees) – the reference category, large firms with 200 up to 2000 employees and very large firms with more than 2000 employees.

Unlike the labour market segmentation approach the household structure approach draws attention to the structural composition of the family and how this affects participation patterns over the life cycle, rather than emphasising the individual human-capital attainments of family members. According to this approach, the two key factors influ-

encing female labour supply are the presence of children or other unemployed persons in the household. This research indicates, in general, that in larger families or those with pre-school children, women are more likely to withdraw from the labour market. The presence of older children is often associated with a transition out of non-employment to part-time work, or in some cases a return to full-time work. However, cross-national comparisons have indicated that these trends are mediated by the provision of maternity benefits, leave arrangements and childcare provision (Fagan and Rubery, 1996; Gornick et al., 1997; Daune-Richard, 1998; Pfau-Effinger, 1998). In a cross-national comparison, Gustafson et al. (1996) have argued that German women stay longer out of the labour market for child rearing than do British women, which is related to the possibility of longer maternity leave. Additional tax thresholds and welfare entitlements can also shape participation or withdrawal patterns in different societies (Doudeijns, 1998; Wakisaka and Bae, 1998; Dingeldey, 1999). The importance of these factors can also be found in research concerning unemployed households.

Rising unemployment has been associated with a growing polarisation between work-rich and work-poor households (Rodgers et al., 1995; Cousins, 1998). Gregg and Wadsworth (1995) and Smith et al. (1998) have argued that part-time work accounts for most of the growth of new jobs in the British labour market. However, the take-up of these jobs has not affected the distribution of unemployment by household types; if anything, it has led to a polarisation of work-rich and work-poor households, in some countries more than in others (Gregg and Wadsworth), 1998). This is because only households with a full-time, usually male, breadwinner are able to afford to have their spouse working part-time. In households where the man is long-term unemployed, the tax and benefits systems serve to penalise those who take up part-time jobs by excluding them from receipt of benefits (Doudeijns, 1998; Sinn 2003). In households where the man loses his full-time job, women working part-time are likely to give up their job if they realise that their partner will be unemployed in the long term (Morris, 1989). This household composition approach would suggest that working time reductions are found in households with a full-time working partner. Withdrawing from employment, rather than working time reductions are associated with a spouse becoming unemployed. The focus of this approach is on the composition of the household and its interaction with welfare provision, and how these affect working time adjustments. To measure the effects of household characteristics, we use spouse's employment status, spouse's income and children composition variables.

3. Data

The data are from the household/individuals GSOEP file (German Socio-economic Panel). From the waves of 1998, 1999, 2000, 2001, 2002, 2003 we select women who work in at least two consecutive years¹ between the ages of 18 and 60 inclusive. The indicator variable quit only includes voluntarily mobility between employers, i.e. job mobility has taken place on behalf of individuals request. The hours change indicator equals unity if women realised a weekly working time reduction exceeding 1.5 actual working hours per week² and zero otherwise³.

The timing of the variables requires discussion. The GSOEP survey is conducted during the whole year. The hours measures correspond to hours worked at the time the survey is conducted. The quit indicator provided by the survey indicates whether a quit occurred in the year before the survey (i.e., March to March). The fact that hours refer to hours worked at the time the survey was conducted and the quit measures refers to the survey year or the year before the survey poses a particular problem for the hours change equation. If in March t a quit in March $t - 1$ is reported, actual hours in the survey refer to hours in the new job. However difficulties can occur in order to designate the actual working hours in the old job. Given the quit has taken place in March/April of $t - 1$, the actual working hours in the old job is not given by actual working hours in $t - 1$ but $t - 2$. The problem can be solved as information about the calendar year and month of the start of the new job is available. The quit indicator is equal to 1 if a quit occurred.

The most important variables in the analysis are described in Table 1. Important variables in the analysis are both those describing the composition of children in the family and those describing the composition of the household labour supply such as the spouse's labour supply and his labour income. The composition of the children was differentiated in the following way.

¹ Women restarting their employment after maternity or parental leave were also included.

² Statements regarding actual working hours have been imputed by contractual working hours given that the employees were able to compensate overtime through time off. Otherwise working time has been measured by the item actual working hours per week.

³ This implies that zero outcome includes the situation of unchanged working time and also extended weekly working time. Several estimations have shown that the results do not differ significantly if the sample is restricted to employed women with unchanged or reduced working hours versus the whole sample of employed women. Actually this result is an indication that we do not need to apply a ordered bivariate probit analysis.

Table 1

Descriptive statistics for married women between 18 and 60 years, being employed for at least two consecutive years from 1997 until 2003			
Mean, (standard deviation)	Stayer	Mover	Total
<i>Individual characteristics</i>			
For (German)	0,92 (0,28)	0,93 (0,26)	0,92 (0,28)
Married (married)	0,65 (0,48)	0,45 (0,50)	0,64 (0,48)
Single (single woman living on her own)	0,10 (0,30)	0,18 (0,39)	0,10 (0,31)
Extra (single living with others)	0,25 (0,43)	0,37 (0,48)	0,26 (0,44)
Union (union member)	0,11 (0,31)	0,06 (0,24)	0,11 (0,31)
Age (age)	41,1 (10,38)	34,37 (8,87)	40,8 (10,4)
Care (person needing care in the household laterly)	0,01 (0,07)	0,00 (0,04)	0,01 (0,07)
Child01 (newborn child)	0,01 (0,08)	0,00 (0,07)	0,01 (0,08)
Child02 (preschool age between 2 and under 5 years)	0,01 (0,10)	0,01 (0,12)	0,01 (0,10)
Child03 (school enrolment between 5 and under 7 years)	0,04 (0,2)	0,04 (0,19)	0,04 (0,20)
Child04 (school children between 8 and under 15 years)	0,03 (0,17)	0,02 (0,15)	0,03 (0,16)
Mobilityexp_ (job mobility experience)	0,09 (0,29)	0,37 (0,48)	0,09 (0,29)
Mover (Mover/Stayer)	0,00 (0,00)	1,00 (0,00)	0,03 (0,18)
Eduyear (education in years)	12,17 (2,53)	12,16 (2,36)	12,17 (2,52)
<i>Spouse</i>			
Munemp1 (employed in t-1, unemployed spouse in t)	0,02 (0,13)	0,00 (0,00)	0,02 (0,12)
Mearn1 (change of spouse's income in 1000 €)	0,51 (15,73)	0,6 (8,47)	0,51 (15,54)
<i>Regions</i>			
West (West Germany)	0,73 (0,44)	0,88 (0,32)	0,74 (0,44)
Unem1 (regional unemployment rate (t-1))	11,85 (4,93)	10,44 (4,09)	11,80 (4,91)
<i>Unweighted cases</i>	19422	695	20117

Source: Socio-Economic Panel ,own calculations

New-born, a child was born since the beginning of $t - 1$ (newborn), Pre-school children, one or more children are living in the household in the age under 7 years, but are not new-born and School children, one or more children are already visiting school in the age between 7 and 15 years inclusive. In order of the fact, that we attempt to say some-

thing about job mobility and its relation to working hours adjustments in terms of structural parameters, we need to measure changes of the household composition.

In the following only four classes of children variables were used. Basically children have been divided in new-born children, pre-school aged children, children in the age of school enrolment and other school children. These categories do characterize the most important age classes for children in Germany which are corresponding to child care institutions and other relevant means of family policy such as maternal or parental leave.

Finally, we include a set of variables that may affect the average hours change or the quit behaviour, including age, education, nationality, union membership, experience with previous job mobility, spouses' employment status and income, sectoral and firm size dummies, dummies per year, regional dummy (East/West Germany) and regional unemployment rates.

4. Empirical Method

The decision whether to move¹ or to stay depends according to the theoretical approaches described above on the expected utility in different sectors or occupations. In case the expected utility of a new job less the mobility costs exceeds the utility of the present job, the employee will quit his job. The utility of the present job depends among other things on the satisfaction with the individual working time and the working time flexibility each firm provides his employees. Following the labour segmentation theory we do expect, that employees who are part of the internal labour market are usually provided with rather extensive working time flexibility, because this might be a means to commit employees (especially female employees).

In fact, individuals who wish to reduce hours of work are quite often not able to do so because of the paucity of part-time jobs. Firms, for reasons that may very well reflect efficient responses to the fixed costs of workers (as opposed to hours per worker) (Oi, 1962), generally do not offer jobs with low hours of work; hence the distribution of hours in the part-time range is quite thin. Actually in Germany quite a lot of part-time

¹ Within the scope of this paper job mobility stands for that a person quits his job voluntarily and changes his employer. However, the reasoning is valid for both job mobility within and between employers.

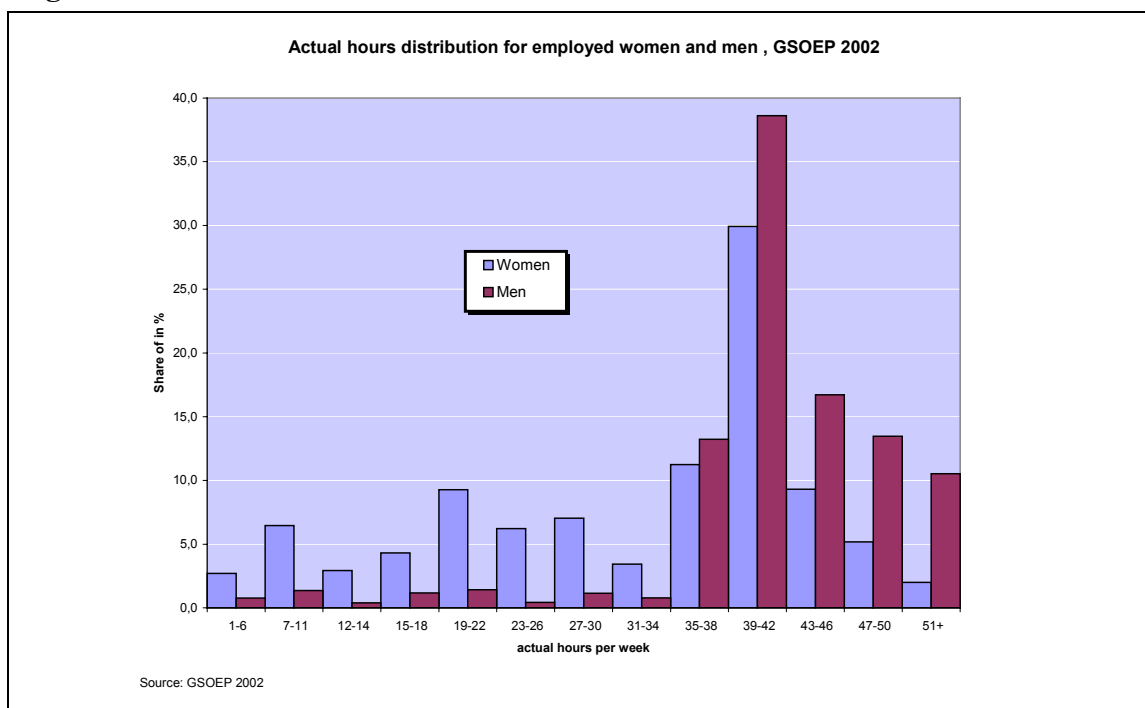
jobs with both low hours of work¹ and so called 50 per cent reduced working hours exist. But rather than fixed costs on the demand side, for females, fixed costs of work to the individual –transportation, child care and job search - may be the binding constraint (Hausman 1980). Consequently, individuals who wish to decrease their hours of work may be constrained from doing so and may be faced with the choice of stopping work altogether or not changing hours at all.

So, although the existence of hours restrictions in the labour market cannot be questioned, it is still an open and intriguing question how tight these restrictions are. One might also ask to what extent job mobility is a means to adjust working hours. Altonji and Paxson (1986, 1992) look at the adjustment of working hours over time, and distinguish between those individuals who stay in their job, and those who change job. Based on the US Panel Study of Income Dynamics, they conclude that working hours of married women are two to four times more variable across jobs than within jobs. In their second article, they correct for the potential endogeneity of job mobility. Based on the US national Longitudinal Survey of Youth, Matinez-Granado (1999) draws the same conclusions for prime age men. Euwals (1999) measures based on the Dutch Socio-Economic Panel (1987 - 1989), the flexibility of working hours within and between jobs by utilising subjective information on individual preferences to adjustments in working hours. The analysis shows, that the flexibility of working hours within jobs is low and that job mobility is a means of adjustment in working hours mainly for women who want to work more hours.

In Germany the relatively even distribution of working hours makes the German labour market look flexible in terms of working hours (see Figure 1).

¹ In Germany a specific institutional situation is given as so-called mini-jobs (income below 400 €) and midi-jobs (labour income between 400 and 800 €) are due to a lower social contribution rate. In fact this is a positive incentive for employers to provide such jobs.

Figure 1



For a closer look to the question if working time flexibility in Germany is given by changing preferences in labour supply without job mobility, we also utilise subjective information on individual preferences to adjustments in working hours. Therefore the question is, are women able to adjust working time within their jobs without quitting according to their individual working time preferences?

Table 2

Cross-tabulation of satisfaction s_{it} and the sign of the change in the actual hours $ha_{it+1}-ha_{it}$						
	Stayer			Mover		
	$s_{it}=-1$	$s_{it}=0$	$s_{it}=1$	$s_{it}=-1$	$s_{it}=0$	$s_{it}=1$
$ha_{it+1}-ha_{it}<0$	12,4	4,9	9,2	30,1	0,0	4,3
$ha_{it+1}-ha_{it}=0$	78,0	88,5	69,7	43,8	57,1	26,1
$ha_{it+1}-ha_{it}>0$	9,6	6,6	21,1	26,1	42,9	69,6
# observations	8943	182	1839	276	7	92

From 1997 until 2003 for at least two consecutive years employed women between 18 and 60 years, with $s_{it}=-1$ desired working time reduction; $s_{it}=0$ satisfaction with actual working time is given; $s_{it}=1$ desired working time extension, $ha_{it+1}-ha_{it}<0$ working time reduction took place; $ha_{it+1}-ha_{it}=0$ no change of working time; $ha_{it+1}-ha_{it}>0$ working time extension took place.

Source: GSOEP, own calculations

Table 2 illustrates the relationship of the satisfaction with the actual working hours, s_{it} , and the working time adjustment which has taken place one year later. As a matter of fact, women who have expressed the desire to reduce (extend) their working hours,

more often have actually reduced (expanded) their working hours in the following period. Anyhow, the frequency distribution already indicates, that obviously flexible working hours are associated with job mobility between employers. A main task of the following analysis is to proof this more deeply. Evaluating the role of the Part-time and Fixed-Term Act regarding the flexibility of working hours and job mobility between employers is a further task. The Act which came into force in January 2001 and gives full-time employees the right to reduce their contractual working hours provided they have been working for at least six month in their current firm, should enhance the possibility for employees to reduce their working hours without job mobility. In order to test the hypothesis that job mobility is necessary if changes in preferences are to affect hours we estimate a hours-change equation, controlling for the effects of quits. If hours can be freely varied within jobs, the effect of changes in preferences on hours for those who do change jobs should be similar to the effect on hours for those who do not change jobs. Conversely, if hours constraints within jobs are important, then changes in preferences should affect hours more strongly when the job changes than when it does not change. Moreover this test can be augmented by the hypothesis if the enforcement of the Part-Time and Fixed-Term Act does facilitate a more freely variation of working hours within jobs.

5. The model.

By means of structural models we attempt to say something about job mobility and its relation to working hours adjustments in terms of structural (e.g. utility function) parameters – albeit, at times, in a non rigorous fashion (Killingworth 1983: 386). The appropriate specification for this type of model is the bivariate probit, a simultaneous equations model that controls for the endogeneity of the two related choices (Ashford and Snowden 1970; Greene 1993) of individuals to move or to stay under the working time restriction.

Individuals will decide to quit if the utility of the new job exceeds the utility of the current job by more than mobility costs. Our bivariate probit estimator is expressed in terms of a continuous latent variable representing utility. Let J_{it}^* be the difference between benefits of the new job and mobility costs of a given employment status for individual i in t . The first term in equation (3.1) is the value that i places on characteristics of the current and new job, including wages. The second term represents the difference between desired and actual working hours, the third term other unobserved variables

u_{it1} . What is observed is the individual's job mobility choice, represented as J_{it} . The relation can be written as:

$$J_{it}^* = \alpha'_{it} X_{it} + \beta_1 (H_{it}^d - H_{it}^a) - u_{it1} \quad \begin{array}{l} J_{it} = 1 \text{ if } J_{it}^* > 0 \\ = 0 \text{ if } J_{it}^* \leq 0 \end{array} \quad (3.1)$$

Women who are not satisfied with their working hours, and who are not able to adjust these within their job, are more likely to change job. This makes job-mobility endogenous. X_{it} is a vector of exogenous variables. The central issue of this study is the extent in which women are able to adjust their working hours within and between jobs. Define the utility of changing the working hours as follows:

$$\Delta H_{it}^* = \gamma'_{it} Z_{it} + \beta_2 J_{it} - u_{it2} \quad \begin{array}{l} \Delta H_{it} = 1 \text{ if } H_{it}^* > 0 \\ = 0 \text{ if } H_{it}^* \leq 0 \end{array} \quad (3.2)$$

The behavioral choice to change working time is again an observed binary outcome as shown in Equation (3.2). Z_{it} is a vector of exogenous variables including the satisfaction with actual working hours and u_{it2} other unobserved variables. The equations (3.1) and (3.2) model the effect of desired hours on realised labour market behaviour. The utility of quitting a job and moving to another is determined by the fact that employees are unsatisfied with their actual working hours, low mobility costs etc. On the other hand the utility of changing the working hours is determined by several labour supply parameters which vary across individuals and by job mobility.

With the Part-time and Fixed-Term Act coming into force, the utility of changing the working hours equation (3.2) is modified as follows:

$$\Delta H_{it}^* = \gamma'_{it} Z_{it} + \beta_2 J_{it} - u_{it2} \quad \begin{array}{l} \Delta H_{it} = 1 \text{ if } H_{it}^* \geq 0 \\ = 0 \text{ if } H_{it}^* < 0 \end{array} \quad (3.2)$$

$$\text{with } \beta_2 = (\beta_3 + \beta_4 D) \quad \begin{array}{l} D = 1 \text{ TzBfG} \\ = 0 \text{ without TzBfG.} \end{array} \quad (3.3)$$

The model is just identified when not the same vector of covariates appears in each equation (Maddala 1983:123). The random error terms u_{it1} and u_{it2} , are dependent and normally distributed, such that $E[u_{it1}] = E[u_{it2}] = 0$, $\text{var}[u_{it1}] = \text{var}[u_{it2}] = 1$ and $\text{cov}[u_{it1}, u_{it2}] = \rho$. If a Wald Test shows ρ is insignificant then no endogeneity bias is

present and the two models can be estimated separately as binomial probits. If however ρ is significant and the log-likelihood of the bivariate estimate is significantly less than the joint binomial probit log-likelihoods, then indeed J_{it} and ΔH_{it} are endogenous processes (Bertaut 1998; SataCorp 1999:137). Denote the joint distribution function of (u_1, u_2) by $F(\cdot, \cdot)$ and assume for simplicity of notation that u_1 and u_2 have symmetric distributions. Then the joint probability distribution of (J, H) is given by the following expressions (Maddala 1983:123):

$$P_{11} = \text{Prob}(J = 1, H = 1) = F[(\alpha' X + \beta_1'(H^d - H^a), \beta_2 + \gamma' Z); \rho] \quad (3.4)$$

$$P_{10} = \text{Prob}(J = 1, H = 0) = F[(\alpha' X + \beta_1'(H^d - H^a), -\beta_2 - \gamma' Z); -\rho] \quad (3.5)$$

$$P_{01} = \text{Prob}(J = 0, H = 1) = F[-(\alpha' X - \beta_1'(H^d - H^a), \beta_2 + \gamma' Z); -\rho] \quad (3.6)$$

$$P_{00} = \text{Prob}(J = 0, H = 0) = F[-(\alpha' X - \beta_1'(H^d - H^a), -\beta_2 - \gamma' Z); \rho] \quad (3.7)$$

and the likelihood function to be maximized is:

$$L(\beta_1, \beta_2, \gamma_1, \gamma_2) = \prod P_{11}^{JH} P_{10}^{J(1-H)} P_{01}^{(1-J)H} P_{00}^{(1-J)(1-H)} \quad (3.8)$$

with $\beta_2 = (\beta_3 + \beta_4 D)$.

Equation (3.1) and (3.2) are simultaneously estimated using maximum likelihood, producing estimates of parameter coefficients α , β , γ and ρ .

6. Results

Table 3 illustrates the results of the estimation. In the first step the results of the job mobility equation (3.1) are discussed, afterwards the working hours adjustment equation (3.2). As expected, women who are living by their own more often do change their employers than others do. Up to maximum of 32 years, older women are more mobile. If their are older than 32 years, the probability of job mobility decreases (Zimmermann 1998). The subjective indicator for satisfaction with working time measured as difference between desired and actual working hours in the previous period is not significant. However analogous to Euwals (1999) the two relevant dummy variables indicate, that quits are rather a means of adjusting working time for employees who want to work longer. In fact the modelling of this indicator has to be improved, in order to predict the

probability of job mobility between employer. A rather good prediction result shows the variable which comprises information regarding previous experience of individual job mobility. This also could be a hint, that the relevant individual is part of the external or precarious labour market segment. If employees have changed their jobs before, they are more likely to do this again. As expected employees of the public services are less likely to change employers. This could be due to the fact that such a change can imply considerable financial loss resulting in not being liable for supplementary pensions anymore. Coeval, working time flexibility in the public sector in Germany generally is more flexible than in the private sector, last but not least because since several years according legal claims for reducing working time are in force, in particular for employees with the need for reconciling family and work. Primarily in East Germany and in firms with more than 2000 employees job mobility is low. Given the unemployment rates in East Germany this is mainly due to the bad employment options. In firms with more than 2000 employees for women it is obviously more attractive to stay than in small enterprises. As the labour market segmentation approach assumes, especially in large firms internal labour markets exist, though as better possibilities for adjusting working time. The opposite is true for small firms. As expected especially in the Service Sector we do find higher job mobility than in the manufacturing industry. This partly might be due to the more restrictive working time regimes in this sector, partly due to the fact that in this sector quite often only low skills are required. Regarding education we find that higher skilled employees quit more often. Up to a maximum of about 15 years of education, i.e. skilled employees are more mobile. High-skilled employees are not that mobile any more.

The working hours change equation, which measures the utility of reducing working time indicates the following. Up to a maximum of 38.5 years, older women are able to increase their utility by reducing their working time. If they are beyond this age, the utility gain of reducing their working hours decreases. The age profile indicates that motherhood obviously plays an important role. This result is backed up by the result that women whose children grow in the age of school enrolment gain additional utility of reducing working hours, whereas in case the children grow older adjustment of working time is not that important anymore. These results are plausible as child caring institutions especially for younger school children are very rare in Germany. The fact that no significant influence for women with children under 5 years was found, probably is due to the German parental leave act and the shortness of day care possibilities for children under 3 years. The result is, that women with children in this age quite often are not employed.

Table 3

Bivariate probit analysis				
Seemingly unrelated bivariate probit; Number of obs = 11402, Wald chi2(62) = 967,18				
Log likelihood = -60872,15; Prob > chi ² = 0,00				
<i>Variables</i>	Mover-Equation		Hours-Change-Equation	
	<i>Coefficient</i>	<i>Stddv.</i>	<i>Coefficient</i>	<i>Stddv.</i>
Nation (=1, German)	0,251 **	0,122		
Single woman living on her own	0,182 ***	0,061	-0,115 ***	0,039
Single woman living with others	0,333 ***	0,072	-0,149 ***	0,050
Union member	-0,139	0,098		
Age * 10 ⁻¹	0,874 ***	0,199	-0,362 ***	0,109
Age ² * 10 ⁻³	-1,368 ***	0,262	0,471 ***	0,134
Desired – actual working hours > 0	0,066	0,068	-0,208 ***	0,047
Desired – actual working hours < 0	-0,053	0,057	0,465 ***	0,032
Education (in years)	0,292 ***	0,105	-0,203 ***	0,055
Education ² (in years)	-0,010 ***	0,004	0,008 ***	0,002
Job mobility experience	0,798 ***	0,060		
Public Service	-0,522 ***	0,081		
Regional unemployment rate (t-1)	-0,006	0,011		
Western Germany	0,363 ***	0,126	0,041	0,034
Under 20 employees inclusive	0,086	0,064	0,1745 **	0,052
200 up to 2000 employees	-0,115	0,075	-0,071 *	0,041
2000 and more employees	-0,193 **	0,083	-0,02	0,044
Agriculture, forestry	0,228	0,246	0,111	0,154
Energy, water, mining	-0,213	0,414	-0,068	0,191
Construction	0,168	0,184	-0,345 ***	0,134
Trade	0,072	0,087	0,095 *	0,051
Transport, storage, communication	0,139	0,152	0,085	0,085
Financial intermediation	0,197	0,122	-0,177 **	0,077
Real estate, renting, business activities	0,142	0,101	-0,001	0,065
Other Services	0,168 **	0,085	0,100 **	0,044
Private Households, non profit sector	0,105	0,138	-0,278 ***	0,061
Unemployment of spouse (employed in t-1, unemployed in t)			0,075	0,113
Change of spouses' income from t-1 to t (in 1000 €)			-0,001	0,001
Mover			0,830 **	0,375
TzBfG			0,064	0,061
TzBfG*Mover			0,050	0,145
Person needing care latterly			0,008	0,192
Newborn Child (t-1, t)			0,245	0,207
Pre-school children (between 2 and under 5 years) (t-1, t)			-0,122	0,181
Children in age of school enrolment (5 to 7 years) (t-1,t)			0,150 **	0,077
School children (between 8 and 5 years) (t-1,t)			-0,171 *	0,103
<i>rho</i>	-0,216	0,172		
<i>Wald test of rho=0: chi2(1) = 1,48266 Prob > chi2=0,2234</i>				

Estimates of both equations include yearly dummies, the coefficients are not illustrated.

* Significant on 10 % level

** Significant on 5 % level

*** Significant on 1 % level

Source: GSOEP 1997-2003, own calculations

Higher education implies, that reducing working time does decrease utility for women. Though in the case of education from 13 years and more, utility of reducing working time increases. This might be due to the household income situation. Even though changes in the income situation of the spouse both in terms of his employment status and his income changes did not produce significant results. The utility of reducing working hours is significantly higher if the women indicated in $t-1$ that she wants to work less. Accordingly the utility of reducing working hours decreases if the woman indicated the desire to extend her working hours. This situation partly is characterised by involuntarily part-time employment.

The aim of the study is to show, if job mobility implies a higher probability to reduce the working time. This is affirmed by the estimation presented. Job mobility is a significant mean to adjust working time. At the same time it is worth noting, that when the Part-time and Fixed-Term Act came into force, reducing working time has been (not significant) alleviated but job mobility (not significant) did not decrease. The results further indicate, that in small firms with less than 20 employees, working time reductions are rather possible. Following the labour segmentation approach this is probably due to the institutional settings in Germany concerning part-time work such as the so-called Mini- and Midijobs.

7. Conclusions

Recapitulating the results, obviously in Germany as in the Netherlands, job mobility is a means of adjustment in working hours. With implementing the Part-time and Fixed-term Act the government tried to alter this situation. However, our results do not (not yet) indicate significantly, that this goal was achieved. Though the algebraic signs of the relevant coefficients indicate that the Act partly has the desired effects, i.e. that reducing working time has been conveyed.

8. Literature

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