

# **Unpaid overtime working in Germany and the UK**

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## **ABSTRACT:**

Unpaid overtime is as important quantitatively as paid overtime. Yet, there has been relatively very little research on the subject. This paper investigates the incidence and determinants of unpaid overtime working in Germany and the UK. Among the economic associations emphasised are managerial/professional occupations, wages, productivity, promotion and profit sharing. Empirical work is based on the German Socio-Economic Panel and the British Household Panel Survey, 1991-97.

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## 1. INTRODUCTION

The role of overtime working is central to the European work sharing debates. There is a widespread belief in government circles that this variable offers perhaps the greatest scope for reducing the availability of work to those with jobs and increasing job opportunities for the unemployed. There are potential problems associated with overtime reductions, however. One of these has recently been emphasised by Bauer and Zimmermann (1999) in the case of Germany. They show that unskilled workers experience relatively low overtime and the highest risks of becoming unemployed. By contrast, skilled workers undertake relatively high levels of overtime and face excess demand for their labour services. Since skilled and unskilled workers are largely *complements* in production, reductions in overtime lead to less production and a decline in unskilled employment.

Here, we focus on a new, and highly significant, area of overtime working in the two economies that provides even greater potential problems for policy makers. This concerns the fact that workers in Germany and the UK undertake significant levels of both paid *and unpaid* overtime.<sup>1</sup> The work sharing debate features paid overtime. It has completely ignored the fact that important elements of labour provide extra hours at no extra cost. This paper focuses on the determinants of unpaid overtime working

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<sup>1</sup> Separate data on paid and unpaid overtime are only just emerging in European countries. Germany and the UK have been at the vanguard of providing comprehensive data on these two overtime elements. Earlier work on unpaid overtime is limited, although see Gerlach and Hübler (1987) and Bell and Hart (1999).

in the two countries. We concentrate on the period 1991 to 1997 using the German Socio-Economic Panel (GSOEP) and the British Household Panel Survey (BHPS).

## 2. REASONS FOR WORKING UNPAID OVERTIME

Based in part on Bell and Hart (1999), we outline a number of economic reasons why individuals may be willing to work extra hours for no pay.

### *Management and Professional workers*

Management and professional workers undertake relatively complex job tasks, the execution of which may require multi-task human capital and organisational skills. In many instances, more uncertainty may attach to the time required to execute a given job than to the wage rate per period needed to hire someone with the requisite skills. The principal and agent may bargain not over the salary level commensurate with the job description but over the length of time the need to execute tasks. How long will be required to change the organisational structure of a company in order to achieve a set of defined targets? What time would be required to produce an analytical report on a specified set of problems? What is a feasible planning horizon to computerise customer services in a state-run agency? Contractual agreements over prescribed time limits would have to satisfy the minimum participation constraints of both parties, but as a result of the random noise associated with task completion times, some workers may have to provide more labour than allowed for by the contract. Such workers are effectively undertaking unpaid work.

### *Productivity*

Some firms may find it advantageous to allow workers to compete in order to perform certain job tasks. This competition may take the form of an *auction* where workers bid to be allowed to undertake the work available. The bid takes the form of the length of

time the employee estimates is necessary to complete the task. Less productive workers would find themselves at a competitive disadvantage if they bid honestly. However, so long as employers are indifferent to the hours that workers actually expend over the execution the task, such workers might win the auctions if they ‘overbid’ on time by providing additional unpaid-for hours.

#### *Gift exchange.*

Akerlof (1982) argues that social norms of behaviour may lead to workers and firms engaging in *gift exchange*. The value of the gift from the firm is the margin between the actual wage and the outside wage. The worker’s gift is “work in excess of the minimum standard” (Akerlof, 1982, p.544). The efficiency wage literature has usually interpreted this as a higher level of per-hour productivity. But an alternative form for the workers’ gift might be additional hours worked without any change in work intensity. These additional hours are in a sense unpaid because they are in excess of contractual hours. This outcome may be Pareto optimal for both workers and the firm so long as employers are indifferent to the number of hours actually worked. In this event, we might anticipate strong positive associations between straight-time wage rates and unpaid work and between job satisfaction and unpaid work. Firms that compensate well and/or provide attractive working environments, *ceteris paribus*, are likely to receive more unpaid work as a gift response from their workers.

#### *Promotion*

What determines career advancement in terms of promotion prospects? For the most part, existing studies have tackled this question by examining personal attributes - such as innate ability and educational attainment - as well as general/firm-specific human capital accumulation and deferred compensation contracts. However, for

*given* ability, human capital endowment and contract specification, workers may attempt to gain advancement through work commitment and effort. This may take the form of above-average effort per hour or hours worked per period. It is in this latter respect that unpaid hours become relevant. In environments where job tasks are undertaken in the absence of rigidly prescribed daily or weekly hours, some workers may attempt to achieve above-average results through working time commitments that exceed contractually agreed hours. In other words, current leisure may be sacrificed in order to achieve better future expected remuneration.

### *Hours' preferences*

There is an identification problem that links to the foregoing arguments. Some workers may undertake unpaid hours solely as a means of achieving the end of better pay and promotion prospects. In one sense, unpaid work is a temporary device to achieve, or accelerate the achievement of, a given job goal. Some workers, by contrast, may work unpaid hours because leisure has a low priority within their utility preferences. *Ceteris paribus*, there would be no different expectations of them achieving better wage and promotion rewards. If the latter motive predominates, then arguments related to delayed compensation motivations are significantly weakened. If unpaid work is undertaken with the general aim of achieving a future gain in seniority and/or wage remuneration, we might expect it also to be associated with the desire to work fewer hours in the future. If, on the other hand, unpaid work represents a more steady-state working preference, then it should be linked with an expressed satisfaction with current hours or, perhaps, a wish to work even longer hours.

*Profit sharing*

A clear rationale for undertaking unpaid work is provided among workers whose remuneration is to some degree tied to company performance. Indeed, there may be a comparative advantage in attempting to enhance performance by an emphasis on working more hours per week rather than more effort per hour. As is well known in the latter dimension, it may be prohibitively costly to monitor hourly effort (Alchian and Demsetz, 1972). The free-rider problem may be avoided if an emphasis is placed on numbers of hours worked. If work groups operate in a culture where long hours - both paid and unpaid - become the norm then monitoring costs are reduced since enhanced performance is more visible.

**3 GERMAN AND UK OVERTIME WORKING IN 1997**

Tables 1a and 1b contain summary statistics from our panel data sets as well as the British Labour Force Survey for males and females, respectively. Averaged across male workers, basic weekly hours in Germany are approximately 45 minutes greater than in the UK. The latter country exhibits much wider basic hours' variation; its standard deviation is over 1.7 times that of Germany. Basic weekly hours for UK females are 4 hours lower than their German counterparts. Both countries display wide variation in female hours although, again, the UK's standard deviation is larger than its German equivalent. This almost certainly reflects the greater incidence of part-time working in the UK.

The paid components of overtime working also display a number of significant differences between the two countries. Male paid-for weekly overtime in the UK averaged between 2 hours 20 minutes and 3 hours per week over all workers, while

the equivalent German figure is only in the order of 35 minutes. The incidences of paid overtime also diverge widely between countries. About 10 percent of German males (9 percent of German females) undertake paid overtime compared to between one-quarter and one-third of UK males (11 to 20 percent of UK females). Amongst those working paid overtime, UK males work an average over 9 hours a week, with German males working 3.7 hours. Even UK females that work paid overtime supply almost 90 per cent more than do German males each week.

**Table 1a: Hours of work in Germany and the UK**  
**Males - 1997**

	Germany	United Kingdom	
	GSOEP	LFS	BHPS
<b>All Workers (sample size)</b>	<b>(3884)</b>	<b>(15347)</b>	<b>(2350)</b>
Basic hours	38.16 (4.42)	37.40 (7.34)	37.26 (7.75)
Paid overtime hours	0.59 (1.85)	2.35 (5.38)	3.02 (5.75)
Unpaid overtime hours	0.72 (2.76)	1.74 (4.56)	2.11 (4.98)
Proportion working paid overtime	9.6%	24.7%	32.8%
Proportion working unpaid overtime	19.1%	22.0%	22.5%
Proportion working overtime	28.7%	43.8%	55.4%
<b>Working paid overtime (sample size)</b>	<b>(991)</b>	<b>(3793)</b>	<b>(770)</b>
Basic hours	38.32 (3.10)	38.17 (5.20)	38.46 (5.50)
Paid overtime hours	3.67 (3.14)	9.52 (6.99)	9.2 (6.63)
<b>Working unpaid overtime (sample size)</b>	<b>(380)</b>	<b>(3380)</b>	<b>(529)</b>
Basic hours	38.35 (4.72)	37.80 (4.51)	38.51 (4.04)
Unpaid overtime hours	7.26 (5.45)	7.88 (6.79)	9.38 (6.49)

**Table 1b: Hours of work in Germany and the UK**  
**Females - 1997**

	Germany	United Kingdom	
	GSOEP	LFS	BHPS
<b>All Workers (sample size)</b>	<b>(3048)</b>	<b>(16915)</b>	<b>(2487)</b>
Basic hours	32.76 (9.46)	28.13 (11.22)	28.64 (11.25)
Paid overtime hours	0.63 (1.63)	0.78 (2.86)	1.39 (3.72)
Unpaid overtime hours	0.28 (1.51)	1.10 (3.54)	1.45 (4.10)
Proportion working paid overtime	8.6%	11.5%	19.9%
Proportion working unpaid overtime	12.7%	17.1%	18.8%
Proportion working overtime	21.3%	26.7%	38.8%
<b>Working paid overtime (sample size)</b>	<b>(1028)</b>	<b>(1947)</b>	<b>(495)</b>
Basic hours	34.33 (7.81)	28.50 (10.53)	28.25 (10.84)
Paid overtime hours	2.80 (2.40)	6.81 (5.48)	6.96 (5.54)
<b>Working unpaid overtime (sample size)</b>	<b>(203)</b>	<b>(2891)</b>	<b>(467)</b>
Basic hours	35.43 (8.01)	32.94 (8.23)	34.39 (7.50)
Unpaid overtime hours	4.51 (4.17)	6.43 (6.24)	7.73 (6.42)

The extraordinary feature concerning unpaid overtime - a variable that has until recently been completely overlooked in the labour market literature - is that it is quantitatively on a par with paid overtime. In fact, in our German sample, higher proportions of males and females claim to work unpaid compared to paid overtime. Moreover, Germans who work unpaid overtime average almost double the overtime of workers who work paid overtime.<sup>2</sup> In the UK, the proportions of males and

<sup>2</sup> The German data do not record incidences of individuals working *both* paid and unpaid overtime. In the UK, 1999 data from the Labour Force Survey indicate that 6.8 percent of male overtime workers worked both paid and unpaid overtime. The comparable figure for females is 7.1 percent.



females working unpaid overtime is somewhat less than the respective paid overtime proportions. However, average overtime hours among overtime workers in the two categories are virtually the same. Taken together, paid and unpaid overtime comprise 12 per cent of the total hours input amongst males in the UK, but only 3 per cent in Germany. Averaged over all females, paid and unpaid overtime comprises 9 per cent of total hours input in the UK compared to only 3 per cent in Germany.

We now consider the distribution of overtime working across three major occupational groups within Germany and the UK. In Table 2 we present information on **(i)** managers, **(ii)** professionals and **(iii)** craft, plant and machine operatives.

Consistent with the speculation of the previous section, the incidence and hours of unpaid overtime is especially quantitatively important among managers and professionals.<sup>3</sup> For example, 35.4 percent of UK professional male workers work unpaid overtime and 7.9 percent claim to work in excess of 12 unpaid hours per week. The respective figures for German male professionals are 24.4 and 4.3 percent. The incidences and levels of paid overtime among managers and professionals in both

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<sup>3</sup> While managers in Germany appear to work more unpaid overtime hours than their counterparts in the UK, we note that the German definition of ‘manager’ accounts for only 3.8 of the workforce, compared with 17.8 per cent under the UK definition. It is almost certainly the case that the German definition of manager embraces a narrower and more senior job description. Professionals comprise 21.1 per cent and 15.6 per cent of the workforce in the UK and Germany, respectively.

Table 2 Paid and Unpaid overtime hours by occupation

Hours of overtime	Proportion working unpaid overtime(%)					Proportion working paid overtime(%)					No. (%)
	0	1-6	7-12	13-20	21-40	0	1-6	7-12	13-20	21-40	
<b>UK males</b>											
Managers and administrators	53.5	19.7	15.4	8.4	3.1	93.4	2.7	2.4	1.1	0.5	2641 (17.8)
Professionals	64.6	18.5	9.0	5.6	2.3	89.2	4.9	3.6	1.6	0.7	3141 (21.1)
Craft, plant and machine operatives	96.2	2.8	0.6	0.5	0.1	61.0	14.2	14.0	7.2	3.6	4858 (32.7)
<b>German males</b>											
Managers and administrators	52.6	19.3	17.0	7.4	3.7	83.8	13.4	1.4	1.4	0.0	146 (3.8)
Professionals	75.6	14.4	5.7	3.8	0.5	81.2	16.8	1.3	0.7	0.0	605 (15.6)
Craft, plant and machine operatives	98.1	1.2	0.5	0.2	0.0	89.5	9.1	1.2	0.2	0.0	2122 (54.6)
<b>UK females</b>											
Managers and administrators	63.4	21.2	10.1	4.1	1.2	94.4	3.2	1.8	0.6	0.1	1649 (9.9)
Professionals	65.1	18.5	8.3	5.9	2.3	94.5	3.0	1.8	0.6	0.3	4322 (20.6)
Craft, plant and machine operatives	98.4	1.2	0.2	0.1	0.1	81.9	10.0	5.0	1.9	1.1	1091 (6.6)
<b>German females</b>											
Managers and administrators	47.4	21.1	21.1	10.5	0.0	79.0	21.1	0.0	0.0	0.0	20 (0.7)
Professionals	90.9	6.9	1.9	0.3	0.0	66.9	30.5	2.4	0.2	0.0	622 (20.4)
Craft, plant and machine operatives	99.1	0.9	0.0	0.0	0.0	86.0	12.3	1.6	0.0	0.0	351 (11.5)

countries are small in comparison to unpaid work, especially in the case of females. Very few craft, plant and machine operatives claim to work unpaid overtime in either country while their incidence and hours of paid overtime, especially among males in the UK, are considerably greater than among managers and professionals.

#### 4 PANEL DETERMINANTS OF UNPAID OVERTIME HOURS, 1991-1997

Using the full GSOEP and BHPS data sets for the period 1991-7, we investigate here the determinants of unpaid overtime working.

The equation to be estimated is given by

$$o_{it} = x_{it}'\beta + \alpha_i + \varepsilon_{it} \quad (1)$$

where  $o_{it}$  is unpaid overtime, for which we observe either  $o_{it} > 0$  or  $o_{it} = 0$ .

Additionally in equation (1),  $\beta$  is a vector of coefficients,  $x_{it}$  is the vector of explanatory variables and  $\alpha_i$ ,  $\varepsilon_{it}$  denote respectively the individual-specific effects and the effects that vary with both  $i$  and  $t$ . The  $x$  vector consists of the predicted basic hourly wage, managerial status, company size, productivity<sup>4</sup>, industries, public/private sector and year dummies. A fitted<sup>5</sup> rather than the actual wage is incorporated to avoid the endogeneity problem caused by the joint determination of hours and wages.

We assume that the industry effects  $\alpha_i$ , with variance  $\sigma_\alpha^2$ , the disturbance term  $\varepsilon_{it}$ , with variance  $\sigma_\varepsilon^2$ , are independent across individuals and time.

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<sup>4</sup> We cannot measure productivity directly from the surveys. Instead we form a proxy - the productivity residual - using the deviation of the individual's standard hourly wage from the mean occupational wage.

<sup>5</sup> The estimated wage equation included experience, tenure, years of schooling, marital status, company size and industry as explanatory variables.

For each country, we estimate equation 1 separately for males and females. Results are shown in Table 3.

### **Germany**

The estimates for all workers reveal significant individual effects for males but not for females. Time effects appear to be quite important. Most of the time differences relative to the control year 1991 are significant and all effects are negative. This is perhaps not surprising because 1991 was the year after German unification and in this year the demand for goods and services was very high.<sup>6</sup> But firms were cautious over extending their workforces since they were uncertain over the duration of the demand upturn. Therefore, firms attempted to raise production through expanding working hours, including unpaid overtime.

Unsurprisingly, given the information contained in Table 2, managerial status<sup>7</sup> exerts a strong influence on unpaid hours. The fitted wage also displays significantly positive effects on unpaid work. The productivity residuals, measured by the difference between individual and occupational wages, is significantly negatively related to female unpaid hours and insignificant in the male equation. The female result is consistent with hypothesis advanced in Section 2. The higher the individual productivity then the lower is the necessity to work unpaid overtime hours.

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<sup>6</sup> East Germans used their savings to buy goods that they had not been able to buy in previous years. More importantly, the government and private firms invested in the reconstruction of the East German economy.

<sup>7</sup> A dummy variable indicating whether or not the individual has managerial responsibilities.

## UK

Results with respect to wage and managerial status are very similar to their equivalents for Germany. It is noticeable, however, that the male UK coefficients for the wage are nearly three times larger than their German equivalents. This may be due to a broader definition of the term 'manager' in the UK data. Where management embraces a broader range of job definitions, there is more incentive for job change and promotion and, therefore, a stronger set of incentives to commit to higher effort. The wage results are consistent with the gift exchange hypothesis. In fact, this view is reinforced by the work of Pannenberg and Wagner (2001) who find - also using the BHPS - a strong positive relationship between job satisfaction and unpaid overtime.

British results on productivity do not support the hypothesis that workers with low productivity have to work more unpaid hours: the coefficients have significant positive signs. For whatever reasons, more productive UK individuals appear to have an incentive to work unpaid overtime.

**Table 3 Unpaid overtime panel estimates, 1991 - 1997**

	Males				Females			
	U.K.		Germany		U.K.		Germany	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Productivity	0.263	8.851	0.007	0.270	0.194	8.091	-0.132	-2.129
Managerial status	5.663	17.210	6.012	13.687	3.684	13.254	4.825	9.129
Fitted basic hourly rate	1.472	5.840	0.541	14.713	0.404	2.072	0.482	7.880
Size 2	-2.538	-3.172	1.135	1.348	0.381	0.515	-1.994	-3.682
Size 3	-3.329	-3.959	-0.501	-0.639	0.629	0.851	-3.982	-7.355
Size 4	-4.130	-4.839	-2.166	-2.668	-0.398	-0.504	-6.207	10.068
Size 5	-4.753	-5.179	-3.040	-3.682	-1.643	-2.043	-4.986	-8.196
Ind 2 – energy	1.282	0.867	-0.891	-0.329	-9.094	-3.673	-3.802	-1.038
Ind 3 – extraction	0.298	0.227	-1.548	-1.613	-2.685	-1.723	2.818	2.878
Ind 4 – metal	0.205	0.166	-0.968	-1.599	-1.811	-1.265	-1.144	-1.452
Ind 5 – other manufacturing	-0.370	-0.300	2.374	2.657	-2.220	-1.543	0.265	0.303
Ind 6 - construction	-1.212	-1.016	-2.702	-3.070	-3.144	-1.024	2.005	1.505
Ind 7 - distribution	2.448	2.070	5.100	7.175	-1.764	-1.306	1.175	1.926
Ind 8 – transport	-1.185	-0.863	0.142	0.130	-1.011	-0.579	-0.212	-0.186
Ind 9 – banking	5.575	4.558	3.199	1.705	0.412	0.306	0.987	1.131
Ind 10 - other services	5.202	4.229	2.810	4.654	1.817	1.371	0.549	1.034
Public sector	-0.236	-0.384	0.538	1.403	1.788	4.445	-0.193	-0.405
1992	-0.173	-0.394	-1.539	-3.049	0.441	1.053	-0.354	-0.567
1993	-0.203	-0.462	-1.500	-2.954	0.076	0.203	-1.217	-1.893
1994	-1.555	-3.151	-1.821	-3.574	0.039	0.104	-2.138	-3.259
1995	-1.269	-2.349	-2.509	-4.844	0.259	0.633	-2.367	-3.625
1996	-2.497	-4.053	-3.233	-5.992	-0.223	-0.496	-1.807	-2.833
1997	-3.821	-5.172	-1.938	-3.759	-0.453	-0.881	-0.141	-0.247
Constant	-14.196	-8.491	-23.136	22.021	-5.903	-3.294	-15.226	15.066
$\sigma_{\alpha}$	10.450	61.391	9.052	29.290	8.377	47.929	0.581	.
$\sigma_{\varepsilon}$	6.300	81.001	6.327	43.400	4.896	74.378	8.578	30.628

**Company Size (BHPS):** Size1 < 3; Size2 3-24; Size3 25-199; Size4 200-999; Size5 1000+.

**Company Size (GSOEP):** Size1 < 5; Size2 5-19; Size3 20-199 Size4 200-1999; Size5 2000+.

## 5 PROMOTION PROSPECTS, HOURS' PREFERENCES AND PROFIT SHARING

We now turn our attention to the three remaining areas highlighted in Section 2 in which unpaid overtime plays a potentially interesting role.

### (i) Promotion

We deal first with our investigations of possible links between undertaking unpaid hours and *promotion prospects*. In the case of Germany, after extensive testing with the GSOEP, we could find no significant relationships. Four different German promotion measures were attempted but no significant results were obtained. These were:

- a) if the individual has changed job in 1997 and the chances to be promoted have improved in comparison with the last job;
- b) if the individual has improved the position within the group as blue-collar worker, as white-collar worker or as civil servant;
- c) difference in the Treiman prestige indicator between 1995 and 1997;
- d) difference in the Wegener prestige indicator between 1995 and 1997.<sup>8</sup>

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<sup>8</sup> The Treiman scale is based on investigation from nearly 85 data sets in 60 countries. The interviewed persons had to range occupations according to prestige. From these results Treiman has developed a standardized scale between 0 and 100. The correlations between the scales in the different countries confirm the validity of this instrument. Based on 3-digit ISCO classification the empirical scale ranges from 14.4 (unskilled workers in agriculture) to 78.9 (physicians). Since the Treiman scale is constructed on ratings from different countries and civilizations, some prestige ratings in Germany are not generally well matched. Therefore, Wegener has constructed a specific prestige scale for Germany. While the Treiman scale is based on subjective verbal judgements, Wegener uses a psychophysical method of measurement. Useful references are Treiman (1977 and 1979), Wegener (1978) and Beck et al. (1979).

By contrast, our UK attempts proved to be more rewarding. The BHPS asks respondents to rank - on a scale of 1 (not satisfied) to 7 (completely satisfied) - their perceived promotion prospects.

We investigated possible influences on these responses using estimates of a panel logit model. Results are shown in Table 5. We note that unpaid hours are positively associated with promotion prospects. This supports the notion that unpaid overtime is undertaken in order to enhance the individual's future prospects in the firm. In other words, it represents in part a trade-off between current leisure and future consumption. Of the other variables included in Table 5, length of job tenure is noticeably negatively related to promotion prospects. Logically, the longer workers remain in the same firm, the lower their chances of future promotion.

### **(ii) Hours' preferences**

It is interesting to ascertain whether or not individuals undertake unpaid work in the current period in order to achieve a set of goals, part of which would be to work fewer hours in the future. Alternatively, those working unpaid hours may largely represent a self-selected group of workaholics who regard extra hours as a normal state of affairs. Therefore, it is of interest to relate unpaid working to stated intentions over desired hours. Both GSOEP and BHPS ask questions concerning desired hours.

Unfortunately, the questions are not the same and so comparisons are difficult to make.



**Table 4: Perceived promotion prospects and unpaid hours  
(BHPS, males, conditional fixed-effect logit model, 1991-1997)**

Variable	Coefficients	t-statistic
Unpaid Ovt.	0.021	2.938
Managers-Professionals	0.213	1.721
Tenure	-0.056	-4.017
Tenure <sup>2</sup>	-0.022	-2.018
Log Wage	0.542	3.585
Public Sector	0.290	1.357
Experience	0.004	0.168
Experience <sup>2</sup>	0.0005	0.918
Educ1	0.501	0.553
Educ2	0.494	0.859
Educ3	0.5202492	0.537
Educ4	0.2356491	0.31
Other controls	Industry and firm size	

Number of obs. = 10803  
Number of groups = 1595  
LR  $\chi^2(25) = 124.48$       Log likelihood = -3645.5551  
Prob >  $\chi^2 = 0.0000$

The German desired hours' question takes the form: " If you could choose the extent of your hours at work, taking into account that your earnings would change correspondingly: How many hours per week would you like to work?" This implies that hours increases in the future would lead to wage increases and so implicitly it refers to paid-for hours changes. In Table 5a, we present a cross-sectional regression, for males in 1997, of possible influences on the answer. It is noticeable that unpaid work exerts a positive effect on the amount of desired paid-for hours. This supports the notion that unpaid workers intend to *substitute* towards more paid-for work time in the future. Tentatively, we might conclude from this that unpaid work represents a

temporary state of affairs and that more conventional work time will be more emphasised at a later date. In addition, Table 5a unsurprisingly indicates that household hobbies and childcare tend to depress desired hours. Further paid-for overtime exerts a positive effect on desired hours which may indicate that either not enough overtime is demanded by firms relative to supply at the given premium rates or the premium rates are too high.

**Table 5a Desired hours and unpaid overtime  
(GSOEP – Male Tobit Estimates, 1997)**

Variable	Coefficients	t-statistic
Unpaid overtime 1997	0.595	7.002
Paid overtime 1997	0.786	10.319
Hobby (average hours)	-4.092	-12.583
Training (average hours)	-1.921	-5.435
Child care (average hours)	-1.660	-8.206
Satisfaction with work	-0.258	-1.076
Age	0.080	1.373
Qualification	2.063	2.116
Tenure	9.15E-07	0.461
Second Job Hours	-0.272	-1.116
Wage	1.18E-24	0.239
Constant	8.023	1.587
Other controls	Industry, firm size, religion and marital status	
Standard Error	28.552	
Number of obs = 2733 LR chi2(28) = 499.97		
Prob > chi2 = 0.0000 Log likelihood = -8070.830		
.		

The UK desired hours question is somewhat more usefully focussed: "Thinking about the hours you work, assuming that you would be paid the same amount per hour, would you prefer to..[work]..fewer/more/same hours?" Therefore, this asks about desired hours at *given* wages. Again, we estimate a cross-section regression for males

in 1997 to investigate possible influences on this question. Results are shown in Table 5b.

At given wages, individuals working unpaid work in the UK indicate that they would prefer to work fewer hours. Somewhat more directly than the equivalent German results, therefore, our findings indicate that undertaking unpaid overtime involves working greater than desired hours. This would seem to indicate that, at least for some workers, undertaking unpaid work is not regarded as a permanent, or long-term, desired work practice. This reinforces the finding in Table 4 in relation to promotion. If workers are committing extra hours of effort in order to achieve job advancement then we would expect them to signal that actual hours are in excess of (longer term) desired hours. As for other variables in Table 5b, age is negatively related to desired hours, indicating an income effect. More surprisingly, perhaps, paid overtime is associated with lower desired hours which suggests an over-supply of hours at current premium rates.

### **(iii) Profit sharing contracts**

Both the GSOEP and the BHPS record whether or not an individual receives a part of total compensation in the form profit related pay and/or a performance bonus. For both Germany and the UK, we tested equations that related profit sharing to previous commitments to undertake unpaid work. Where workers have performance-related compensation then they may deem it to be in their own self-interest to work longer hours, including unpaid hours, in order to enhance their rent shares.

We found no associations whatsoever between profit-related pay and unpaid work in the UK. For Germany, however, there is reasonably strong evidence to support a link. Results are shown in Table 6. Profit shares in 1996 are positively related to unpaid

overtime in the preceding year as well as to the level of wage income. In stark contrast, the paid overtime effect is insignificant. One reason for the observed differences between Germany and UK with respect to these variables is that bonus payments in Germany are in the region of five times larger per employee than in the UK (see Hart and Kawasaki, Chapter 4, Table 4.7).

**Table 5b: Desired hours and unpaid hours**

**(BHPS – Male Ordered Probit Estimates, 1997)**

<b>Variable</b>	<b>Coefficients</b>	<b>t-statistic</b>
Unpaid overtime 1997	-.0446	-8.635
Paid overtime 1997	-0.022	-3.574
Managers-Professionals	-0.116	-1.215
Wage 1997	-0.002	-0.236
Public Sector	0.042	0.297
Age	-0.089	-3.954
Age2	0.0009	3.125
Child Care (someone else)	0.088	0.138
Child Care (partner)	0.160	1.724
Child Care (jointly)	0.252	2.04
Other controls	Industry, firm size, education	
Cut 1	-2.622	
Cut 2	-0.578	
Number of obs	=	1213
LR chi2(25)	=	148.97
Prob > chi2	=	0.0000
Log likelihood	=	-967.016
Cut i (i=1,2) indicate the cutting points on the distribution of desired hours; where cut 1 = 'fewer' and cut 2 = 'same'.		

**Table 6: Profit share and unpaid hours****(GSOEP Male Tobit Estimates, 1996)**

Variable	Coefficient	t-statistic
Unpaid Ovt. 1995	644.054	3.464
Paid Ovt. 1995	26.968	0.054
Managers-Professionals	983.523	0.543
Wage 1996	182.603	4.521
Constant	-26529.94	-7.611
Other controls	Industry, firm size, education	
Standard Error	12436.44	
Tobit estimates Number of obs =1558		
LR chi2(17)=120.81 Prob chi2=0.0000		
Log likelihood = -1592.3531 Pseudo R <sup>2</sup> =0.0365		
Obs. Summary: 1433 left-censored observations at psm96<=0		
125 uncensored observations.		

## 6 CONCLUSIONS

Unpaid overtime working is quantitatively as important and paid overtime. Roughly 20 percent of male workers in Germany and the UK claim to work extra hours for no pay. A higher proportion of UK females work unpaid overtime than in Germany (roughly 18 percent compared to 13 percent). Of those working unpaid hours, UK males average 9 hours per week, about 2 hours more than their German equivalents. The respective averages for German female workers are 7 and 4.5 hours. It is perhaps surprising that two advanced industrialised countries – in close proximity and of relatively similar sizes – should display such quantitatively different amounts of unpaid work. Indirectly, our observations may reflect the relatively stronger, and more broadly-based, collective bargaining institutions in Germany. Works Councils facilitate information transfer throughout German organisations in a way that is

generally not matched in the British labour market. Unpaid work may be less commonly practised on the German scene because it is more effectively monitored as between workers and management.<sup>9</sup>

In both countries, unpaid work appears to cluster mainly in managerial and professional occupations and to relate positively to wage rates. Beyond these variables, differences emerge. We find no consistent patterns of unpaid work between the two countries in respect of worker productivity, promotion prospects and profit sharing. But, in one or other country, these latter variables do appear to be significantly related along expected lines. Comparisons with respect to hours' preferences are more difficult to make because of essentially different questions that are asked. On the basis of the UK responses, evidence suggests that many workers regard unpaid work as a temporary phenomenon.

Faced with historically high unemployment rates in recent decades, European policy makers in these and other economies have been keenly interested in the effects of cuts in working time on employment and worker compensation. As in the United States in earlier times, a large emphasis has been placed on work sharing through reducing paid overtime among existing employees in order to create new jobs for the unemployed. The fact that significant numbers of workers, for a range of reasons, are prepared to work marginal hours for no pay serves seriously to complicate the assessment of such policy initiatives.

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<sup>9</sup> Using the 1993 British Labour Force Survey, Bell and Hart (1999) find that unionisation has a negative influence on unpaid overtime (and positive on paid overtime) which lends support to this inference.

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## APPENDIX 1

### UK LABOUR FORCE SURVEY

The Labour Force Survey (LFS) is a survey of households living at private addresses in Great Britain. Its purpose is to provide information on the UK labour market which can then be used to develop, manage, evaluate and report on labour market policies. It is carried out by the Social Survey Division (SSD) of the Office for National Statistics (ONS)<sup>1</sup> in Great Britain and by the Central Survey Unit of the Department of Finance and Personnel in Northern Ireland on behalf of the Department of Economic Development. It is a quarterly survey of around 40000 households that uses a panel design in which households remain part of the survey for five periods. It is only in the last wave that individuals are asked questions about their earnings. The data used here for 1993 are based on all households that experienced their "fifth wave" during 1993.

### GERMAN SOCIO-ECONOMIC PANEL

The German Socio-Economic Panel (GSOEP) was started with the first wave in 1984. It is a representative longitudinal dataset on income, transfer payments, labour market experience, family composition, housing for individuals and families. In addition the dataset contains information on time spending, level of satisfaction, various aspects of life, hopes and fears, political involvement. Questions on the labour market include those to education and training, labour force participation, job changing, working time, wages, non-wage costs, tenure, position, firm size, distance between work place and home, unemployment.

The sample is representative of the whole population in Germany including foreigners. All household members 16 years and older are interviewed. The head of the household answers the household questionnaire which concentrates on housing quality, income, and transfer payments at the household.

The initial sample included 5921 households and 12245 individuals. From 1984 to 1989 the sample was restricted to West Germany. While attrition has reduced the sample, panel children who became older than 15 as well as new members of panel households have increased the sample. After eight waves the West German sample still included 9467 respondents. In 1990 separated samples for East and West Germany were conducted. The first wave for East Germany had 2179 households and 4453 individuals. With the beginning of 1991 we have a joint sample started with 6699 households and 13669 adult respondents.