Collectivism versus Individualism: Performance-related Pay and Union Coverage for Non-standard Workers in Britain*

Alison L. Booth
ISER
University of Essex

Marco Francesconi
ISER
University of Essex

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Abstract

This paper documents the extent of union coverage and performance-related pay (PRP) – the latter representing one aspect of pay flexibility - across standard and non-standard workers in Britain, using the first seven waves of the British Household Panel Survey, 1991-1997. We find there is no evidence of expansion of either union coverage or PRP towards *any* type of non-standard employment in the 1990s. Thus union rhetoric about a 'strategy of enlargement' towards non-standard workers remains just that. The only trend over time that we do observe is a continued small decline in union coverage for *all* male workers (but not for women) and a continued very small growth in PRP coverage for *all* women (but not for men). In addition, while we find large gender differences in union coverage across non-standard workers, there are only negligible gender differences in PRP incidence. Moreover, the relationship between non-standard employment and PRP is typically weak for both men and women. We also find significant occupational and sectoral differences in union coverage and PRP incidence across non-standard workers.

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Keywords: non-standard work, performance-related pay, union coverage, monopsony; probit regressions

Non-technical Summary

The past two decades have witnessed a dramatic decline in union recognition in Britain. At the same time, there has been a growth in flexible forms of employment, and a greater emphasis on pay flexibility as a means of providing incentives in the labour market. Non-standard types of employment – defined in terms of contracts, places, times and hours of work – are likely to be increasingly relevant, it is often argued, as the labour market responds to deregulation, globalisation and intensified competition.

In this paper we investigate the extent and distribution of union coverage and the receipt of performance-related pay (PRP) – the latter representing one aspect of pay flexibility – across both standard and non-standard workers in Britain. We use a large representative sample of workers from the British Household Panel Survey (BHPS), collected annually during the period 1991-1997. We define *standard workers* as those employed on a permanent contract, working at the employer's premises, during the day, and for between 30 and 48 hours per week. *Non-standard workers* are those who do not fit this definition – that is, they are employed on temporary contracts, or work away from the employer's premises, or for shorter or longer hours than the generally accepted norm, or not during the regular working day. Using BHPS data, we find that approximately 59% of men and 52% of women are in jobs with at least one of these characteristics of non-standard work.

Both trade unions and PRP are well-established institutions in the British labour market. The first institution reflects the old notion of "collectivism" in industrial relations, while the second reflects "individualism" in the employment relationship, since it allows individual remuneration to be tailored to individual performance. Although a few commentators have investigated the complex interactions between collectivism and individualism, little is known about how these interactions correlate with non-standard employment. Yet the substantial rise of flexible employment in the last two decades poses new questions about both institutions.

A priori it might be expected that non-standard work is less likely to be associated with union coverage (with the exception of shift work in manufacturing industries). This is because non-standard workers are harder to organise and are in a weaker bargaining position. However, many unions in 1990s Britain have been pursuing a 'strategy of enlargement' specifically directed at non-standard workers in order to halt the decline of union coverage, and it is therefore interesting to chart the extent of union coverage across standard and non-standard workers over the seven year window provided by our data.

On the other hand, the *a priori* relationship between PRP and non-standard work is less clear-cut. Arguments suggesting a positive correlation between PRP and non-standard work are based on the notion that PRP confers an advantage to the firm where output is measurable, and that the worker either also benefits from this, or is instead in a weak bargaining position and unable to resist such payment by output rather than input. But there are also arguments suggesting a negative correlation: for instance, PRP can also be viewed as another facet of labour market flexibility, since it essentially involves pay flexibility. If pay is flexible, then there may be less need for employers to promote employment flexibility through, for example, maintaining a cushion of temporary or

short-hours workers. If this is the case, then pay flexibility may be negatively correlated with some forms of employment flexibility, such as temporary contracts and very short hours. It therefore remains an empirical issue as to whether or not individual coverage by PRP differs across standard and non-standard forms of work.

Our principal findings are as follows:

- The labour market institutions of union coverage and PRP are not necessarily substitutes for one another. Not only do we find that 20% of men and 10% of women are covered by both collective bargaining and PRP, but our statistical analyses also reveal a positive correlation between the unobservable heterogeneity governing joint worker selection into union coverage and PRP.

- There has been no expansion of either union coverage or PRP towards *any* type of non-standard employment in the 1990s. Thus union rhetoric about a 'strategy of enlargement' towards non-standard workers remains just that – at least with our representative data over the period 1991-7. The only trend over time that we do observe is a continued statistically significant decline in union coverage for *all* male workers (but not for women) and a continued very small growth in PRP coverage for *all* women (but not for men).

- We find significant gender differences in the distribution of union recognition and PRP across workers in non-standard jobs. Women across nearly all types of non-standard jobs are significantly less likely to be covered by collective bargaining agreements than women in regular employment. However for men, this negative relationship is only found for men working non-standard hours (greater or less than the standard work week of 30-48 hours).

- The relationship between non-standard types of employment and pay flexibility – as measured by PRP – is typically weak for both men and women. In general, only temporary workers and those working very short hours are significantly less likely to be on PRP than are workers in standard jobs. Furthermore, in spite of the introduction of tax incentives to encourage the use of some forms of PRP over the sample period, there is no evidence of a strong upward trend in PRP coverage for workers in all types of non-standard employment.

- We find significant sectoral and occupational differences in the relationship between non-standard work and union coverage or PRP. There is considerable heterogeneity in union and PRP coverage across non-standard workers in our three occupational groupings. We also find a very much greater union coverage probability for standard public sector men and women than for their non-standard counterparts. Our finding of significantly higher PRP coverage in the private sector relative to the public sector for all workers is as expected, to the extent that private sector output may be more readily measured than output in the public sector. However, with the exception of private sector temporary workers who are typically less likely than private sector permanent workers to be on PRP, there is little systematic variation in sectoral PRP coverage across standard and non-standard jobs.

I. Introduction

The past two decades have witnessed a dramatic decline in union recognition in Britain. At the same time, there has been a growth in flexible forms of employment, and a greater emphasis on pay flexibility as a means of providing incentives in the labour market. Non-standard types of employment – defined in terms of contracts, places, times and hours of work – are likely to be increasingly relevant, it is often argued, as the labour market responds to deregulation, globalisation and intensified competition.

In this paper we investigate the extent and distribution of union coverage and the receipt of performance-related pay (PRP) – the latter representing one aspect of pay flexibility – across both standard and non-standard workers in Britain. We use a large representative sample of workers from the British Household Panel Survey (BHPS), collected annually during the period 1991-1997. We define standard workers as those employed on a permanent contract, working at the employer's premises, during the day, and for between 30 and 48 hours per week. Non-standard workers are those who do not fit this definition – that is, they are employed on temporary contracts, or work away from the employer's premises, or for shorter or longer hours than the generally accepted norm, or not during the regular working day.

Both trade unions and PRP are well-established institutions in the British labour market. The first institution reflects the old notion of "collectivism" in industrial relations, while the second reflects "individualism" in the employment relationship, since it allows individual remuneration to be tailored to individual performance.[1] Although a few commentators have investigated the complex interactions between collectivism and individualism, little is known about how these interactions correlate with non-standard employment. Yet the substantial rise of flexible employment in the last two decades poses

new questions about both institutions. Are union coverage and pay flexibility incompatible in a world where the employment relationship has become flexible? Do we observe an expansion of either of these institutions over time towards any form of non-standard employment? Are there gender differences in the distribution of union coverage and PRP across workers in non-standard jobs? Are there differences across the sectors or occupations historically characterised by differing degrees of collectivism and individualism?

In the industrial relations literature and the public policy debate on new employee relations strategies, there has been increasing interest in the relationship between collectivism and individualism. Some have viewed the decline in influence of trade unions as a "secular drift" towards individualism or new "partnership" arrangements (Storey and Bacon, 1993; Bacon and Storey, 2000). Others have speculated that firms may be more favourable to collective bargaining when it is conducted under diminished levels of union recognition, because in these circumstances employers are more likely to perceive the economic advantages of a participative style of management (Brown, 1999). Others have found that, despite the erosion of the collective determination of wages and working conditions, employees' collectivist attitudes are not jeopardised by new human resource management practices (Deery and Walsh, 1999).

This debate, however, has been primarily informed by data from individual firms or occupations. The primary advantage of examining a single firm or a limited number of firms in the same industry (or in different industries) is that both managers and workers have similar and clear definitions of careers, union recognition and activity, and human resource management practices. But the results from analysing a single firm or occupation typically are not generalisable, since the findings are not representative of the labour market as a whole.

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[1] See Gunnigle, Turner and D'Art (1998) for a similar definition of concepts. For a discussion of collectivism and individualism as two separate dimensions of management style or the employment relationship, see Deery and Walsh (1999) and references therein.

Furthermore, most of the related discussion is based on the concept that changes in the composition of workers are held constant or that labour supply is homogenous. By looking at various forms of non-standard employment we explicitly recognise that the idea of labour market status is more complex than just "employed versus not employed". By doing so, we also recognise that the shifting contractual situation means that workers and firms are continuously changing their bargaining position in terms of pay and readiness to take industrial action.

Non-standard employment has dramatically grown during the last two decades (Dex and McCulloch, 1995), and involves a significant fraction of the British workforce. In the period between 1991 and 1997, almost three-fifths of working men and over half of working women were employed in a non-standard job. Labour market flexibility — including non-standard work — has been generally welcomed by employers and policy makers as a means of improving the performance and adaptability of the labour market, in the face of technical change and increasing globalisation. However, there have been relatively few empirical studies investigating flexible work arrangements,[2] and to our knowledge none of these have investigated the extent of union coverage and PRP coverage amongst non-standard workers. The purpose of this paper is to bridge this gap. In addition, non-standard employment is increasingly falling under the aegis of European Union (EU) directives, e.g., the 2000 Part-time Workers (Prevention of Less Favourable Treatment) Regulation and the 1999 EU directive concerning the framework agreement on fixed-term work.[3] Therefore, it is important to chart the situation before the implementation of new directives has an impact on the labour market.

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[2] Exceptions are Dex and McCulloch (1995) and Francesconi (2000) for Britain, and Kallenberg, Reskin and Hudson (2000) for the United States.

[3] For information see the Department of Trade and Industry site (http://www.dti.gov.uk/er/europe/directives.htm). The text of the Directive and other relevant information can be found at http://europa.eu.int/eur-lex/en/lif/dat/1999/en_399L0070.html.

The remainder of this paper is set out as follows. In the following section, we explore the theoretical background to our analysis. In Section III, we present the data and define our measures of non-standard employment, union coverage and PRP. Section IV discusses our empirical estimates obtained from the samples of men and women ("benchmark results") and examines the extent of gender differences in such estimates. In Section V, we ask whether or not the effects of non-standard employment on union and PRP differ by occupation and sector, and the degree to which such disaggregated effects differ by gender. The final section summarises our principal conclusions.

II. Theoretical Background

II.1 Unions and flexible employment

The growth of a flexible workforce over the past two decades poses potential problems for employee relations and management. Collective bargaining has provided in Britain a well-established means of pay determination and conflict resolution for union-covered workers in standard employment (Godard and Delaney 2000). Perhaps the very attraction of non-standard paid work for firms and policy makers lies in the fact that workers in such jobs typically have little bargaining power[4] and hence conflict resolution is not a problem – the workforce is never in a sufficiently strong position to challenge management. Indeed, there is good reason to expect that coverage by collective bargaining will be lower amongst some forms of non-standard than standard workers, since the former are harder to organise and are in a weaker bargaining position.

Collective bargaining is more likely to emerge when there are rents or any surplus that might be shared with employees, and where the workforce has the power to induce the firms

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[4] Shift workers are sometimes an exception, since one shift under some conditions can hold up the entire production process.

to share in any surplus (Booth, 1995). To the extent that non-standard employment involves marginal jobs in marginal firms – where there are limited rents to be shared and employees are in a weak bargaining position through the nature of the employment contract – then workers employed in non-standard jobs will be *less* likely to be union-covered for collective bargaining.

As their membership base declines (Machin 1997), unions in Britain have become increasingly aware of this lack of coverage, and are starting to attempt to recruit non-standard workers (Heery *et al*., 2000). At the same time, recent Government and EU initiatives have been introduced, with the aim of ameliorating the conditions of traditionally weak groups of the workforce, such as part-timers (Neathey and Arrowsmith, 1999) and temporary workers.[5] Such initiatives may act as a substitute for union activity, since the minimum wage might be regarded as a substitute for collectively bargained wages, while the EU directive provisions may be viewed as a substitute for the employment protection that unions negotiate. These new provisions might thereby make more difficult unions' attempts to recruit non-standard workers. Alternatively, they may be complementary with union recruiting activity, to the extent that unions can monitor compliance with the initiatives and thereby attract non-standard workers.

At this point, however, it is not clear how unions' "strategy of enlargement" will spread across different types of non-standard employment, that is, which workers will first be recruited and which ones will be harder to cover by union contracts. It is also not clear how this strategy will be affected by the minimum wage legislation, which was introduced in

[5] The EU Directive on Fixed-term Work, adopted by the Council of Ministers on 28 June 1999, implements a framework agreement aimed at providing equal treatment for people on fixed-term contracts and preventing abuse of fixed-term contracts. One of the purposes of the agreement is that workers on fixed-term contracts must not receive less favourable conditions (also in terms of information about vacancies and training opportunities) than comparable workers on permanent contracts. In addition one of the following restrictions must be introduced by each member state of the EU: (a) maximum number of times that a contract can be renewed; (b) maximum

Britain on 1 April 1999 (outside our sample period).[6] In our empirical analysis, we are therefore not only interested in measuring the extent of unionism across various groups of non-standard workers, but also in charting the trends in the association between union recognition and non-standard employment over the 1990s (before the implementation of the EU directives and the introduction of the national minimum wage).

II.2 Performance-related pay and flexible employment

The new human resource management techniques — exemplified in this paper by performance-related pay (PRP) — are well suited to reward individual performance where output can be easily monitored (Gibbons, 1998; Poole and Jenkins, 1998; Booth and Frank, 1999; Gibbons and Waldman, 1999; Lazear, 1999; Prendergast, 1999). While PRP does not provide any recognised means of conflict resolution, it is a potentially powerful tool with which to reward effort. Of course PRP is in principle a means of eliciting greater effort in both standard and non-standard forms of employment in which output is measurable, and so firms may wish to implement PRP in both situations. However, to the extent that certain types of non-standard jobs involve working away from an employer's premises, the use of PRP may confer greater monitoring advantages – provided that output is easily measured (e.g., Brown, 1990 and 1992; Heywood, Siebert and Wei et al. 1997). It therefore remains an empirical issue as to whether or not individual coverage by PRP differs across standard and non-standard forms of work.[7]

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total duration that contracts can last; (c) any renewal must be objectively justified. The UK Government has until 10 July 2001 to implement this Directive into national law. All these initiatives are outside our sample period.

[6] The introduction of a national minimum wage was one of the manifesto commitments of the Labour Party. Since the Labour Party's victory of the general election on 1 May 1997, firms, workers and trade unions had almost two years to adjust their behaviour and expectations before its actual implementation.

[7] The UK government has also provided tax incentives to encourage the use of profit-related pay, one form of PRP. From 1991, up to 20 percent of total pay could be fully exempt if received in an approved profit-related pay scheme. The take-up of profit-related pay increased over the 1990s, until the announcement of its phasing out in 1997 (Booth and Frank 1999). In our empirical analysis, while we cannot separately identify profit-related pay from other forms of PRP, we do pay attention to the time trend in PRP coverage over the sample period.

In some service and public sector industries, monitoring is in practice difficult to implement, because output is inherently difficult to measure. For this reason, in our empirical work reported below, we also perform separate analyses of workers by broad occupational groups and by sector.[8] The public sector (and various occupations within it) has a long history of strong support for collective bargaining. Thus a stratification of workers by occupation and sector is also likely to improve our understanding of how different types of non-standard employment affect union recognition.

While the economics literature is unanimous in its belief that PRP is a powerful tool with which to reward individual effort, there is some scepticism from industrial relations scholars. Streek (1989), for example, views PRP as a 'return to contract', and manifestation of a lack of trust in the workforce. For this reason, we might expect that PRP would be more prevalent in non-standard jobs. Of course, PRP can also be viewed as another facet of labour market flexibility, since it essentially involves pay flexibility. If pay is flexible, then there may be less need for employers to promote employment flexibility through, for example, maintaining a cushion of temporary or short-hours workers. If this is the case, then pay flexibility may be negatively correlated with some forms of employment flexibility, such as temporary contracts and very short hours.

Alternatively, workers in flexible jobs may be more likely to get flexible pay as proxied by PRP, because such workers are in a weak bargaining position. In such a situation, there may be a positive correlation between coverage by PRP and certain forms of non-standard work.

III. Data, variables and methods

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[8] Details are given below in Section V.

The data used in this analysis come from the first seven waves of the British Household Panel Survey (BHPS), 1991-97. This is a nationally representative random sample survey of private households in Britain, that have been annually interviewed since the autumn of 1991.[9] Our analysis is based on the sub-sample of men and women who were born after 1936 (thus aged at most 60 in 1997), who reported positive hours of work, who provided complete information at the interview dates, who left school and were employed at the time of the survey, and who were not in the armed forces or self-employed. We have a longitudinal sample of 1,728 men and 1,971 women, with 11,186 and 12,821 person-wave observations, respectively.

The data allow us to distinguish four aspects of flexible work arrangements. The first aspect involves *temporary work*, which we further break down into seasonal or casual work, and work done under contract or for a fixed period of time. The second aspect *involves place-of-work flexibility*, which distinguishes between those who work at home, those who work driving and travelling and those who work in more than one place (for a single job). The third type of flexibility is about *working times*, which separately identifies those who work mornings only, those who work either afternoons, or evenings, or nights or both lunch and evening ("other parts of the day"), those who have varying patterns and those who work in rotating shifts.[10] The fourth type of flexibility refers to the *number of hours of work*. We distinguish between those who work 1 to 15 hours per week ("mini-jobs"), those who work

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[9] A detailed description of the data source, its sampling scheme, weighting and imputation procedures provided to account for differential unit non-response, the questionnaire and variables can be found at http://www.iser.essex.ac.uk/bhps/doc/index.htm.

[10] Of course, rotating shifts are typical of much manufacturing industry (particularly energy, extraction and light manufacturing for men) and the transportation industry, in which trade union presence has historically been strong. While rotating shifts might be viewed as the norm in such industries, we include this form of work in our definition of non-standard employment to capture other employment relationships in which union coverage is not necessarily expected to be high, such as service industries excluding banking and insurance (e.g., cleaning services, hairdressing and laundries).

between 16 and 29 hours per week and those who work more than 48 hours per week.[11] Given these definitions of the various forms of non-standard work, notice that workers in "standard" jobs are on a permanent contract, work at the employer's premises, during the day and for a number of hours ranging between 30 and 48 per week.

Table 1 presents the distribution of workers in flexible forms of employment for the entire workforce and by gender. The table clearly shows that non-standard employment is an integral aspect of the British labour market in the 1990s. Approximately 59% of men and 52% of women are in a job that involves some form of flexibility.[12] About 8 percent of workers is employed in jobs that involve non-standard contracts and almost 15 percent are in jobs with some form of non-standard place. A larger fraction of the workforce is involved in jobs with non-standard times (30 percent) and an even larger fraction has jobs with non-standard hours (40 percent). With only two exceptions (fixed-term contracts and varying patterns), all gender differences are significant. Men are more likely to be found in jobs that involve rotating shifts, driving/travelling, working in more than one place and long working hours. Women are, instead, more concentrated in seasonal/casual jobs, working less than 30 hours a week, working at home, working mornings only or in other parts of the day.

Table 2 reports the distribution of union coverage and PRP by gender.[13] To account for attrition and item non-response, we report weighted figures as well as unweighted ones.[14] As

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[11] The choice of these cutoffs is motivated by current institutional settings in Britain. Workers in mini-jobs (and low income) are potentially eligible for the Income Support and Jobseeker's Allowance benefits (Iacovou and Berthoud, 2000). Those working between 16 and 29 hours are part-timers (comparable to those in "half-time jobs" defined in Hakim (1997)). Those working long hours are the target of recent EU policy initiatives (such as the 1998 European Working Time Directive) that aim to reduce the number of hours worked in a week below 48 (Neathey and Arrowsmith, 1999).

[12] While the figures for women are close to those reported in Dex and McCulloch (1995) obtained from the 1994 Labour Force Survey, our figures for men are more than twice as large. This difference is likely to be related to the different definitions of flexible work rather than to a genuine increase in male non-standard employment.

[13] The two questions used to construct these variables are the following: "Is there a trade union, or a similar body such as a staff association, recognised by your management for negotiating pay or conditions for the people doing your sort of job in your workplace?" And "Does your pay ever include incentive bonuses or profit related pay?"

[14] In Table 2, we use the BHPS cross-sectional enumerated individual weights. We have also used cross-sectional respondent weights (which adjust all interviewed adults at the wave for those who refused, were proxied or were unable to give an interview), and the conclusions we draw are unchanged.

the table indicates, the hypothesis that the weighted data are identical to the unweighted data cannot be rejected at any level of statistical significance. Thus we proceed using the unweighted data only. About 55 percent of the observations for male workers and 51 percent of the observations for female workers involve jobs that are covered by a trade union. These figures are somewhat greater than (but not inconsistent with) those obtained from the Labour Force Survey by Cully and Woodland (1998, Table 6), which indicate that 47 percent of male and female employees are in workplaces with union recognition between 1993 and 1997. If we restrict our BHPS sample to those dates and pool men and women, we find that 51 percent of workers are in union-covered jobs.[15] Notice that the four-percent gender difference is statistically significant. The gender difference is even larger in the case of PRP, with more than one-third of the observations for men and just above one-fifth of the observations for women being under a PRP scheme.[16] Workers on PRP are almost equally split between union jobs (19 and 10 percent for men and women, respectively) and non-union jobs (17 percent and 11 percent, respectively). But among union-covered workers, a much greater proportion is not on a PRP scheme (35 and 41 percent for men and women). The remaining 28 percent of male observations and 38 percent of female observations are neither covered by a trade union nor under a PRP scheme.

Tables 3a and 3b document the extent to which the non-standard forms of employment listed in Table 1 are distributed across union and non-union workers and across PRP and non-PRP workers, for men and women, separately. For men, non-standard contracts (particularly seasonal/casual contracts) are more frequently found among non-union workers. There is no

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[15] Hildreth (1999) and Arulampalam and Booth (2000) discuss some of the problems of the union data gathered by the BHPS. Notice, however, that similar statistics are reported in Booth and Frank (1999), who employ the first four waves of the BHPS. Using a BHPS sample of only private-sector workers between 1991 and 1995, Hildreth finds that almost 40 percent of workers are in union-covered jobs. In fact, restricting our sample to private-sector workers (and allowing for somewhat different age, worked hours, and contract restrictions in line with Hildreth's), we find that 37 percent of all (male and female) workers are in firms with union recognition.
[16] These figures are close to those reported in Booth and Frank (1999).

significant difference in the extent of home work for union and non-union covered men. However, a larger proportion of non-union men work in more than one place and a larger proportion of union men are in jobs involving driving and travelling. The 15-percent difference emerging in the case of time-of-work flexibility is almost entirely due to the distribution of workers in rotating shifts, with the proportion of male union workers on shifts being four times greater than that of non-union workers (20 percent versus 5 percent). Working standard hours (that is, between 30 and 48 hours a week) is more prevalent for union-covered men, while non-union workers tend to be disproportionately represented in all the other hours-of-work groups, especially mini-jobs and long hours.

The differences between PRP workers and non-PRP workers in terms of flexible employment are even larger. In general, flexible employment is more common among non-PRP workers, with the exception of working while driving/travelling, working mornings only, and working more than 48 hours a week. This pattern also emerges for women, who experience different PRP distributions across almost all types of non-standard employment (Table 3b). Such differences range from 2 percent in the case of place flexibility to 14 percent in the case of hours flexibility. Interestingly, women are also characterised by significant union differences, again in nearly all forms of flexible employment. The only exception refers to place flexibility, with 92 percent of women working at the employer's premises regardless of union coverage. But this aggregate similarity is the result of significant (and counteracting) differences across the three types of non-standard places.

The patterns of these distributions, however, may mask some significant relationships between types of flexible employment and the labour market institutions in which we are interested. To detect the existence of such relationships, and potentially important trend effects and gender differences, we now turn to the results of our multivariate analysis. We perform this analysis using probit and bivariate probit regressions of union recognition and

PRP on the various forms of non-standard employment.[17,18] The other explanatory variables included in the analysis are: years of experience in part-time work and full-time work, age groups (3 dummy variables), cohort of entry in the labour market (5), disability status, marital status (2), number of children by age group (the two child's age groups are: 0-4 years of age and 5-16 years of age), educational qualification (5 dummy variables), region of residence (6), house tenure (2), current part-time employment status, industry (9), occupation (8), sector (4), firm size (3), ratio of the local unemployment to local vacancies. Their definitions and means of these variables are reported in the Appendix Table A1.

IV. Benchmark results

Our benchmark results, for the separate male and female samples, are reported in Table 4. The first pair of columns for the separate results for men and women report the marginal effects (and absolute *t*-ratios) obtained from pooled probit regressions (i.e., regressions performed on the entire set of person-wave observations) of the probability of a worker being in a job with union recognition or performance-related pay, respectively. The next two columns report the effects obtained from a bivariate probit regression, in which the two probit equations have correlated disturbances (the correlation is denoted by ρ). The table only reports the results for the variables capturing the various forms of flexible employment. The other explanatory

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[17] We estimate bivariate probit models because there may well be correlation between unobservable factors affecting coverage by union bargaining and coverage by PRP. For example, if high-ability workers tend to concentrate in jobs with high PRP coverage and low probability of union recognition, then a negative correlation in unobservables will emerge. On the other hand, if low-ability workers are more likely to be in union covered jobs (Card, 1996) and their remuneration is at least partially based on performance, we then expect to detect a positive correlation in unobservables.

[18] We have also performed part of our estimation using random-effects probit models to exploit the longitudinal aspect of the BHPS data. We find that the fraction of the total error variance explained by the individual random component is large (of the order of 60 percent) for both men and women. This reduces the magnitude of the marginal effects compared to those obtained with the pooled and bivariate probit regressions. But the relationships between union coverage and PRP coverage among non-standard workers are qualitatively similar to those reported here. For simplicity, we chose to present only the results obtained from pooled and bivariate probit regressions.

variables included in all regressions are not reported for brevity, but are listed in full in the notes to the table.[19]

The first row in Table 4 reports the baseline probability of being in a union-covered job and the baseline probability of receiving a performance-related pay, both evaluated at the means of the corresponding samples of male and female workers. Regardless of gender, the models slightly over-predict the probability of union recognition, and they tend to under-predict the probability of receiving PRP (for this comparison, see the first two lines of Table 2). It should be noticed that, for both union coverage and PRP equations and for both men and women, the coefficients obtained from the bivariate probit regressions are always within the 95 percent confidence interval of the coefficients obtained from the pooled probit regressions.[20] This is because the estimated value of ρ is small, despite being statistically significant and positive (that is, the unobserved component of the union coverage likelihood is positively correlated with the unobserved component of the likelihood of receiving performance-related pay). Thus, we shall mainly focus on the results from the pooled probit regressions. However, the fact that ρ is estimated be positive is intrinsically interesting, because it provides indirect evidence that collectivism and individualism are not incompatible institutions from the workers' viewpoint. If the unobservables that select workers into union-covered jobs are positively correlated with the unobservables that select the same workers into PRP-covered jobs, it is unlikely that union recognition in the workplace necessarily excludes the presence of forms of individualisation of the employment relationship, such as PRP.

IV.1 Union coverage

For men, being employed either in a seasonal/casual job or on a fixed-term contract has no significant impact on the union coverage probability. But for women, a seasonal/casual job

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[19] These estimates can be obtained from the authors upon request.

decreases the union coverage probability by 16 percent and being on fixed-term contracts reduces the likelihood by about 8.5 percentage points. Non-standard places of work have statistically insignificant effects on union coverage for men, while having a job at home diminishes the union recognition probability by more than 40 percent for women.

Workers employed in jobs involving non-standard times are typically *more* likely to be union-covered than workers with a regular day schedule. This relationship is particularly strong for men who work on rotating shifts and men who work in the afternoons, evenings or nights ("other parts of the day"), who are 22-23 percent more likely to be union-covered. However, women who work only in the mornings are about 8-9 percent less likely to be on a union-covered contract than women who normally work during the day. Women on rotating shifts and working in other parts of the day are significantly more likely to be union-covered, although the marginal effects are much smaller than for men (averaging around 8-10 percentage points). This finding reflects the fact that rotating shifts are typical of many industries in which trade union presence has historically been strong. In fact, some shift workers may be in a good position to hold up the entire production process, and thus employers have in the past been more willing to make concessions to such workers, including union recognition

Finally, consider hours of work. For both men and women, union recognition tends to be strongly (positively) associated with jobs characterised by regular hours. Relative to the base of 30-48 hours of work, men doing non-standard hours are significantly less likely to be union-covered across all specifications. Union coverage among men who have mean characteristics and work fewer than 30 hours a week is between 17 and 21 percent, being 36-40 percentage points lower than the baseline. For women, having a mini-job reduces the

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probability of union recognition by almost 8 percent, while working 16-29 hours a week is not statistically different from the base of working 30-48 hours in its impact on the union coverage probability. For both men and women, we find strong evidence that working long hours is more likely among non-union workers: those who work long hours have a 9-percent lower probability of being in a union-covered job.

In sum, men in temporary jobs and in jobs with place-of-work flexibility experience neither a higher nor a lower likelihood of union recognition than their regular-work counterparts. In line with the theoretical arguments outlined in Section II, men working non-standard hours are significantly less likely to be union-covered. On the other hand, men employed in jobs involving non-standard times (except those who work in the mornings only) are *more* likely to be union-covered than men employed in regular jobs. While this finding is not surprising for workers on rotating shifts (a traditional group of interest to trade unions), it is, instead, remarkable for other men on flexible times. How much this is the outcome of a recent strategy of enlargement rather than a long-standing practice will be investigated in subsection IV.3, but it is nonetheless interesting that we found a pocket of union-covered workers in jobs outside the boundaries of regular employment. The theory prediction seems to work well in the case of women. With the exception of women on rotating shifts and in jobs that involve working in the afternoons, evenings or nights, women across all types of non-standard work have a lower probability of union recognition than women in regular employment do. It is often argued that female workers are more likely to be in monopsonistic employment, for example because they are limited in the area over which they can look for a job owing to family obligations (Dex, 1999, and references therein). For this reason they may be not only be more likely to take some types of non-standard work, but also be less likely to

be covered by a union ceteris paribus.[21] This monopsony explanation may underlie women's higher take-up rates of seasonal/casual jobs, working very short-hours, working in the mornings only or in other parts of the day, and working at home. It may also explain their generally lower likelihood of being covered by a union. In subsection IV.4, we investigate whether or not these differences between men and women are statistically significant.

IV.2 Performance-related pay

What impact does non-standard work have on the individual probability of receiving PRP? For both men and women, both forms of temporary work have a significantly negative effect on the likelihood of receiving PRP. Men on seasonal/casual contracts are almost 16 percent less likely to receive PRP than men on permanent contracts, while men on fixed-term contracts are about 14 percent less likely to receive PRP. The marginal effects for women are smaller (in absolute value), being around 9 percent lower probability for both types of temporary employment. But the female baseline probability is also smaller, being approximately 16 percentage points below the male baseline.

Both place-of-work flexibility and time-of-work flexibility have no effect on the PRP receipt probability for women. For men, instead, we find that those working in the mornings only are 21 percent more likely to be in jobs with PRP than men working during the day. But just 1.6 percent of the observations refer to men working mornings only (see Table 1), and of these almost 60 percent are in semi-skilled and unskilled occupations. There is also some positive effect for men who work in more than one place: the magnitude of this effect is, however, fairly small (less than 5 percent higher probability), and it is significant only at the 10 percent level according to the bivariate probit estimates.

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[21] The negative relationship between union coverage and non-standard employment may become even stronger if such non-standard jobs (e.g., temporary jobs) are increasingly covered by the national minimum wage. See the discussion in subsection II.1

Finally, working fewer than 16 hours a week significantly reduces the probability of receiving PRP by almost 20 percentage points for men and by 8.5 percentage points for women. Neither working part-time (between 16 and 29 hours a week) nor working long hours (more than 48 hours a week) is associated with significant variations in the likelihood of receiving PRP for both men and women.

To summarise, the connection between employment flexibility as measured by non-standard work, and pay flexibility as measured by PRP, is typically very weak for both men and women. In general, temporary workers and those working very short hours are significantly less likely to be on PRP. But other forms of non-standard work are no different to standard employment in their coverage by PRP. The exception of men working only in the mornings, who have higher probability of being covered by PRP than regular-time workers, involves a small fraction of the male workforce. To some extent, PRP can be viewed as another facet of labour market flexibility, since it essentially involves pay flexibility. Where pay is flexible, there may be less need for firms to promote employment flexibility through maintaining a cushion of temporary or short-time workers, for example, and this may explain the significant negative correlation between PRP coverage and temporary jobs and very short hours.

IV.3 Time trends

We now address the question of whether or not there are time effects in union coverage and PRP across forms of non-standard employment. Not only is this analysis likely to uncover how well trade unions have pursued a strategy of enlargement over the 1990s, but it also reveals whether the new human resource management techniques — exemplified by PRP — have affected flexible workers.[22] We estimate separate male and female (pooled) probit

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[22] As mentioned above, there has been a within-sample change to PRP legislation that encouraged the use of profit-related pay via tax incentives (introduced in 1991). This has initially expanded the use of PRP methods at

regressions that, in addition to all the variables used in the previous analysis, include also a linear time trend and its interactions with each of the types of flexible employment.[23]

Table 5 contains the estimated marginal effects for men and women. The results reveal that male union coverage has declined by one percentage point every year between 1991 and 1997, whereas union recognition for women does not show any substantial time trend. If these trends were to persist over time, it would take 7-8 years for women's union coverage to have fully caught up with men's, ceteris paribus.[24] Apart from male and female workers involved in jobs with varying time patterns, who experience a significant expansion of union coverage over the 1990s, there is no evidence of unions' enlargement to the other non-standard workers during the same period. The table shows no evidence of a trend in PRP coverage for men, in spite of tax incentives over the period. However, women experience half a percentage point increase in PRP coverage every year, but workers in all flexible jobs experience neither a faster nor a slower rate of PRP receipt.[25] For men, non-standard work typically has no significant effect on PRP coverage, except for those whose jobs require varying patterns of working time, who have benefited from a 2.4 percent increase in PRP coverage, while men working long hours are 2.3 percentage points less likely to receive PRP each year.

IV.4 Gender differences

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the beginning of (or just before) the sample period. But profit-related pay coverage has tapered off with the phasing out of the legislation in 1997.

[23] We have also performed the analysis using a cubic polynomial (rather than a linear) time trend. The coefficients on the quadratic and cubic terms are not significant in the union and PRP regressions for men and in the union regression for women. In the PRP regression for women, instead, all three terms are statistically significant at the 5 percent level. But the overall marginal effect of these terms on the probability of receiving PRP is virtually identical to that obtained from the linear time trend presented in Table 5.

[24] Let γ_j denote the union coverage rate for j=M (men) and W (women), and θ denote the annual union coverage (negative) growth rate for men. The estimated number of years before convergence in union coverage between men and women is simply given by the value of x that solves the following: $\gamma_M(1-\theta_M)^x = \gamma_W$. Using the average union coverage rates (see Table 2, unweighted figures), and the estimated trend $\theta = 0.01$, then $[\log(0.507) - \log(0.547)]/\log(1-0.01) = 7.56$ years.

[25] In any case, it will be a long time before any gender convergence in PRP rates becomes evident, because women started out with a very low coverage compared to men. If these rates were to persist over time, all else equal, it will take no less than 100 years for women to fully catch up with men's PRP coverage. In fact, using the

This issue is relevant for both equity and efficiency arguments. An obvious equity consideration emerges if men and women, who are identical in all observable characteristics but gender, have unequal probabilities of being covered by a union and by PRP for no reason other than their gender. An efficiency consideration (which is not addressed in this paper) arises when coverage or the lack of coverage – either by a union or by PRP – translates into a misallocation of resources that affects the determination of earnings and their distribution (Polachek and Kim, 1994). We address the gender differences issue using the pooled probit estimates presented in Table 4. Once the gender differences (male minus female estimates) are computed, we perform a *t*-test of significance of such differences.[26] The results are reported in Table 6.

There are sizeable gender differences in union coverage across all dimensions of non-standard employment. Particularly large are the differences arising in seasonal/casual employment (11 percent), working at home (43 percent), working in other parts of the day (15 percent) and on rotating shifts (13 percent). These estimates reveal that women in such jobs are significantly less likely than men to be union-covered. However, among those who work less than 30 hours a week, it is men that are (20 to 30 percent) less likely than women to be covered by a union. The gender differences in PRP are overall much less pronounced. The only significant difference emerges among those working in the mornings only, with men being 22 percent more likely than women to receive PRP. But in every year between 1991 and 1997, a small fraction of the male workforce is in such jobs (less than 2 percent), whereas 9 percent of women are in this type of flexible-time employment.

It therefore appears that, from the perspective of union leaders' strategy of enlargement to non-standard workers, attention should be paid to gender issues. If it is true that female

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observed proportions reported in Table 2 and the estimated trend coefficients of Table 5, we find that [log(0.364)-log(0.213)]/log(1+0.005)=107.44 years.

employment (and particularly non-standard employment) tends to be characterised by monopsonistic elements, there may be room for unions to step in and challenge management to the extent that the minimum wage constraint is not binding. On the other hand, the distribution of PRP coverage for non-standard workers does not show any particular gender bias. Notice however that, relative to women, men are almost twice as likely to receive PRP on average: this large differential is neither mitigated not magnified by flexible work arrangements.

V. Effects by occupation and by sector

Do the probabilities of union and PRP coverage for non-standard forms of employment vary across occupation and sector? And how does any such observed variation differ by gender? Other studies using British data find that PRP varies across occupation or sectors (see for example Booth and Frank, 1999; Burgess and Metcalfe, 1999, and references therein). It is also well known that union coverage is more common in the public sector — particularly the civil service, the National Health Service (NHS) and education — than in the private sector.[27] To check if these occupational and sectoral differences in union coverage and PRP incidence are related to patterns of flexible employment, we estimate pooled probit regressions similar to those presented above, separately for three occupation groups based on the Standard Occupational Classification (white collar, pink collar and blue collar)[28] and for two employing sectors (private and non-private). In the "white-collar" group we include managerial and professional occupations, associate professional and technical occupations, teachers and nurses. The "pink-collar" group contains clerical and secretarial occupations, personal service

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[26] A positive value of the gender difference means that the marginal effect for men is greater than the marginal effect for women, that is, either more positive or less negative.

occupations and sales occupations, while the "blue-collar" group comprises craft and related occupations, plant and machine operatives and other semi-skilled and unskilled occupations. The "non-private" sector contains the civil service (including central government), local government (town halls, etc.), other public sectors (including higher education, the NHS, and nationalised industries), and non-profit organisations. The gender-based regression results from these regressions are presented in Tables 7 and 8, along with the corresponding estimated gender differences.

V.1 Occupation

Among women, white collars have the largest union coverage (68 percent)[29], and pink collars the largest PRP receipt (23 percent). In the case of men, blue collars are those with the highest union coverage (57 percent) and white collars have the highest PRP coverage (40 percent).

With the exception of men working non-standard times and women on rotating shifts, employment in all flexible jobs either reduces or does not affect the likelihood of being union covered for both men and women in white-collar occupations. This may explain the few gender differences emerging in such occupations, differences that are relevant only for a relatively small fraction of workers (i.e., workers in more than one place and workers in other parts of the day). Relative to their standard counterparts, almost all flexible white-collar workers face also a lower (but not precisely measured) probability of receiving PRP, particularly in the case of men in non-standard contracts. The only exception occurs for men working long hours, who have a 6 percent higher probability of PRP coverage than their male counterparts who work standard hours and have a 5 percent higher probability than the corresponding group of long-hours women (this gender difference is, however, significant

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[27] See Disney, Gosling and Machin (1995) for an account of the decline in union recognition in 1980s Britain using establishment-level data. See also Bain and Elsheikh (1979) discuss the growth in statutory recognition in the 1960s-1970s.

[28] For a similar labelling of occupational categories, see Segal and Sullivan (1997).

only at the 10 percent level). The only strong gender differential in PRP receipt concerns seasonal/casual workers, with men having a 17 percent lower probability than women.

Among male and female pink collars, we observe a large negative relationship between employment in jobs with non-standard hours or non-standard contracts and the likelihood of collective bargaining coverage. In the case of women, this effect is considerable for those in seasonal/casual jobs (16 percent), in mini-jobs and working long hours (both 14 percent). In the case of men, it is especially large for those on fixed-term contracts (17 percent), in mini-jobs (43 percent), part-time jobs (35 percent) and long-hours jobs (12 percent). This leads to insignificant gender differences in union coverage for such jobs. Significant gender differentials do emerge, however, in the case of flexible time employment, with men being 15-21 percent more likely to be union-covered than women on rotating shifts, working in other parts of the day and varying patterns. Another large gender difference occurs in the case of people working at home (with women having a 53 percent lower probability of union coverage). This group of workers experiences also a significant gender differential in PRP receipt: the chances that a man working at home receives PRP are 65 percent higher than those of a woman. The only other significant gender difference emerges amongst workers whose job involves driving/travelling, with men having an 11 percent higher probability than women of being covered by PRP. Looking at the gender-specific regression results, we notice that the likelihood of receiving PRP is lower for all pink workers on non-standard contracts and in jobs requiring non-standard times. It is higher instead for men employed in jobs involving non-standard places (this explains the gender differentials described above). While the PRP chances of men and women working non-standard hours are essentially identical to

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[29] Among white collar women, nurses and teachers report the highest union coverage rates at 92 and 87 percent respectively, while women in managerial occupations report the lowest coverage at 43 percent.

the chances of those working regular hours, except for women working fewer than 16 hours a week, who experience 11 percent lower chances to be PRP covered.

Blue-collar men in general – in standard and in non-standard jobs – are most likely to be union covered. This effect is particularly strong for men who work non-standard times or in non-standard places. However, blue collars in temporary jobs or working non-standard hours, experience neither a higher nor a lower probability of being union covered than their regular counterparts.[30] The estimates tell a different story for blue-collar women in non-standard employment. Without exception, these women face significantly lower union coverage probabilities than their counterparts in standard employment. Especially sizeable are the negative effects for women working in the mornings only (18 percent lower probability), working at home (31 percent) and in mini-jobs (27 percent). Consequently, the gender differences are such that the effects for men are always greater than the corresponding effects for women (either more positive or less negative). These gender differences are particularly strong among blue collars who work at home (65 percent), in jobs involving driving/travelling (22 percent) and, surprisingly, on rotating shifts (29 percent). Apart from men who work at home (an extremely small fraction of the blue-collar workforce) blue collars are also less (or equally) likely to be covered by PRP than their regular counterparts. This is true for both men and women, although the effects for men in non-standard contracts are larger, in absolute value, and more precisely estimated than the corresponding effects for women.

V.2 Sector

Table 8 shows that 92 percent of men and 86 percent of women employed in the non-private sector are covered by collective bargaining agreements (versus 42 and 27 percent in the

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[30] Indeed, men working more than 48 hours a week have a 6 percent lower probability compared to those in the base group (working 30-48 hours a week).

private sector, respectively).[31] Table 8 also reveals the extent of PRP across sectors. Some 42 percent of men and 26 percent of women in the private sector receive PRP, substantially higher proportions than those found for men and women in the non-private sector (16 and 6 percent, respectively). Our finding of significantly higher PRP coverage in the private sector relative to the public sector for all workers is as expected, to the extent that private sector output may be more readily measured than output in the public sector. It is also similar to other available British evidence.[32] However, this negative correlation between the public sector and PRP incidence may change in the future, through for example the recent Government programme of encouraging the use of PRP schemes for public sector employees (Cabinet Office 1999).

Table 8 reveals that, in the private sector, men working non-standard times or in non-standard places are significantly more likely to be union covered than the corresponding men in standard types of employment. These effects range from a 7 percent higher probability for workers whose jobs involve driving/travelling to 28 percent for those on rotating shifts. Being in a temporary job has no effect on men's chances of union recognition. But working non-standard hours strongly reduces their likelihood of union coverage: this negative effect is 8 percent for those who work more than 48 hours a week, 27 percent for half-time workers and 33 percent for those in mini-jobs. In general, flexible employment reduces the female probability of union recognition. This is the case for those in seasonal/casual jobs (11 percent lower probability), in mini-jobs (9 percent) and working at home (24 percent). But women who work some forms of non-standard times (other parts of the day and varying patterns)

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[31] Bain and Elsheikh (1979) note the positive attitude of successive governments in the 1960s and 1970s towards unionisation in the civil service, local authorities and other public bodies including the nationalised industries, an effect that clearly lingers on. There was also a period of statutory recognition.

[32] For example, Booth and Frank (1999), using waves 1-4 of the BHPS, show that public sector workers are less likely to be on PRP, while Burgess and Metcalfe (1999) using workplace-level data show that the PRP receipt is higher for workers employed in the private sector than for those employed in the public sector, particularly for

experience 7 percent higher union coverage probabilities. As a result, we observe some large

gender differences across virtually all forms of non-standard employment in the private sector.

Of noticeable size and significance are the differences occurring among workers on rotating

shifts, half-timers, those in mini-jobs, those working at home and those whose work requires

driving/travelling. In contrast, there are only a few noteworthy gender differentials emerging

in PRP receipt. This is because employment in non-standard jobs does not significantly affect

workers' chances of PRP coverage. The only exception occurs for temporary workers who,

regardless of gender, have substantially lower probabilities of receiving PRP than workers on

standard contracts.

Although nearly all workers in the non-private sector are covered by collective

bargaining, non-standard workers are not. Indeed, for some, the probability of being union

covered is reduced by as much as 55 percent relative to their standard worker counterparts

(this is the case for women working at home). For other flexible workers, the effect is smaller

— albeit still substantial. This is the case for women working in the mornings only (a 12

percent lower probability), working long hours (8 percent lower), in mini-jobs (14 percent

lower) and in seasonal/casual jobs (8 percent lower). A similar result is found for public sector

men in temporary jobs (8-9 percent lower probabilities), in mini-jobs (24 percent lower) and

in half-time jobs (13 percent lower). Interestingly, and perhaps surprisingly in the public

sector where equal opportunities have long been a concern, there is evidence of some gender

differences in union coverage across non-standard workers. They emerge among public sector

workers on fixed-term contracts (with men having a 5 percent lower probability of being

covered than women) and among those who work at home or in other parts of the day (with

women having 31 and 7 percent lower probabilities, respectively). However, the only

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non-manual occupations. However, neither study investigates differences between standard and non-standard
workers.

significant gender differences in PRP receipt in the public sector involve individuals working in more than one place (with men having a 9 percent higher probability than women) and those in jobs with varying time patterns (with men having a 10 percent lower probability than women). Furthermore, men on fixed-term contracts have a 9 percent lower probability of receiving PRP, while women working more than 48 hours have a 4 percent higher chance than their respective standard counterparts. It appears, however, that the relationship between flexible employment and PRP coverage is otherwise generally weak.

V.3 Discussion

The results from this disaggregated analysis complement our findings for the whole sample (Table 4). The probability of PRP coverage for temporary workers (particularly men) is lower relative to permanent workers, not only for the entire sample but also across broad occupational groups and employing sectors. It is possible that PRP is not just a means of eliciting greater effort in jobs where output is measurable, but also a reward directed to the most productive workers. Temporary workers not only provide a cushion of employment that can be more easily adjusted during booms or slumps, but they are also less likely to receive work-related training (Booth, Francesconi and Frank 2000). Since temporary workers are characterised by high turnover rates and a high cost in acquiring specific human, they are arguably less productive and for this reason might not be offered the 'reward' of PRP.

We find no relationship between pay flexibility − as measured by PRP − and non-standard employment for workers in the private sector and for white and blue collars. Other types of non-standard workers − such as those working non-standard times or non-standard hours in the non-private sector, and those working in non-standard places in pink-collar occupations − actually face a higher chance of PRP coverage than their standard counterparts. This may reflect a greater degree of output observability for these non-standard workers

and/or a greater propensity of the firms employing them to base their remuneration scheme on performance considerations to elicit more effort.

The picture that emerges for union coverage is more complex. Regardless of sector and occupation, temporary workers and those working non-standard hours are generally less likely to be covered by collective bargaining agreements. We can partly interpret this in the light of the theoretical arguments outlined in Section II, to the extent that these forms of non-standard employment involve marginal jobs in marginal firms. This interpretation is, however, hard to justify in the case of men and women working more than 48 hours a week, who represent more than one-third of the workforce. Perhaps some of these workers feel they will achieve more on the basis of individual effort rather than through collective union strategies. But on the other hand, there is also little evidence that such workers are more likely to be covered by PRP. Of course, the individualisation of the employment relationship goes beyond PRP. There are other individually-based incentives such as promotion opportunities, stock options, merit pay and the like that are not captured by our data, and need further exploration in future research.

Contrary to economic theory, workers in some other types of non-standard jobs – such as those requiring non-standard times across all occupational groups and in the private sector – are more likely to be union covered than their standard counterparts in "nine-to-five" jobs. This is unsurprising for shift workers who, because of their strong bargaining power, have long been a core group of the union-covered workforce. But the higher probability of union coverage for those workers (particularly men) in jobs involving varying time patterns or work in other parts of the day (including afternoon, evenings or nights) is surprising. This does not appear to be part of any enlargement strategy that trade unions would have implemented in the 1990s. It is possible that trade unions have responded not just to the symptoms of their secular decline but also to the potentially irreversible changes in the workplace, characterised by

increasing globalisation and intensified economic competition, the "24-hour-economy", decentralised management, customised products and work differentiation (Harkness 1999; Carnoy 1999). It is striking that this effect does not emerge for women. Because trade unions are often more concerned about longer serving members who agree contracts with steep returns to seniority (Booth and Frank 1996), this result might be explained by women's shorter job tenure and stronger propensity to be in monopsonistic employment. Despite this explanation, it is important for unions to appreciate the large gender differences in coverage, which affect approximately one-third of working women.

VI. Conclusions

In this paper we investigated the extent and distribution of union coverage and the receipt of performance-related pay (PRP) – the latter representing one aspect of pay flexibility – across both standard and non-standard workers in Britain. Both trade unions and PRP are well-established institutions in the British labour market, and can respectively be viewed as facets of collectivism and individualism.

Although *a priori* it might be expected that non-standard work is less likely to be associated with union coverage (with the exception of shift work in manufacturing industries) – because non-standard workers are harder to organise and are in a weaker bargaining position – some British unions in the 1990s have been pursuing a 'strategy of enlargement'. Since in many cases this strategy is specifically directed at non-standard workers in order to halt the decline of union coverage, it is therefore interesting to chart the extent of union coverage across standard and non-standard workers over the seven year window provided by our data.

In contrast, the *a priori* relationship between PRP and non-standard work is less clear-cut. Arguments suggesting a positive correlation between PRP and non-standard work are based on the notion that PRP confers an advantage to the firm where output is measurable, and that

the worker either also benefits from this, or is instead in a weak bargaining position and unable to resist such payment by output rather than input. But there are also arguments suggesting a negative correlation. For instance, PRP can also be viewed as another facet of labour market flexibility, since it essentially involves pay flexibility. If pay *is* flexible, then there may be less need for employers to promote employment flexibility through, for example, maintaining a cushion of temporary or short-hours workers. If this is the case, then pay flexibility may be negatively correlated with some forms of employment flexibility, such as temporary contracts and very short hours. It is therefore an empirical issue as to whether or not individual coverage by PRP differs across standard and non-standard forms of work.

Our principal findings are as follows. First, the labour market institutions of union coverage and PRP are not necessarily substitutes for one another. Not only do we find that 20% of men and 10% of women are covered by both collective bargaining and PRP, but our statistical analyses also reveal a positive correlation between the unobservable heterogeneity governing joint worker selection into union coverage and PRP. Second, there has been no expansion of either union coverage or PRP towards *any* type of non-standard employment in the 1990s. Thus union rhetoric about a 'strategy of enlargement' towards non-standard workers remains just that – at least with our representative data over the period 1991-1997.[33] The only trend over time that we do observe is a continued statistically significant decline in union coverage for *all* male workers (but not for women) and a continued very small growth in PRP coverage for *all* women (but not for men).

Third, we find significant gender differences in the distribution of union recognition and PRP across workers in non-standard jobs. Women across nearly all types of non-standard jobs are significantly less likely to be covered by collective bargaining agreements than women in

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[33] It is also interesting that private sector US unions have been unable to expand their organising activity, as shown by Farber and Western (2000).

regular employment. However for men, this negative relationship is only found for men working non-standard hours (greater or less than the standard work week of 30-48 hours).

Forth, the relationship between non-standard types of employment and pay flexibility – as measured by PRP – is typically weak for both men and women. In general, only temporary workers and those working very short hours are significantly less likely to be on PRP than are workers in standard jobs. Furthermore, in spite of the introduction of tax incentives to encourage the use of some forms of PRP over the sample period, there is no evidence of a strong upward trend in PRP coverage for workers in all types of non-standard employment.

Finally, we find significant sectoral and occupational differences in the relationship between non-standard work and union coverage or PRP. There is considerable heterogeneity in union and PRP coverage across non-standard workers in our three occupational groupings. There is also a much greater union coverage probability for standard public sector men and women than for their non-standard counterparts. Our finding of significantly higher PRP coverage in the private sector relative to the public sector for all workers is as expected, to the extent that private sector output may be more readily measured than output in the public sector. However, with the exception of private sector temporary workers who are typically less likely than private sector permanent workers to be on PRP, there is little systematic variation in sectoral PRP coverage across standard and non-standard jobs.

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Table 1: Distribution of flexible forms of employment by gender

	All	Men	Women	Gender gap
Non-standard contract				
Seasonal/casual	0.052	0.039	0.063	-0.024***
				-8.497
Fixed-term contract	0.031	0.029	0.033	-0.004
				-1.630
Standard contract	0.917	0.932	0.904	0.028***
(permanent contract)				*7.844*
Non-standard place				
Working at home	0.009	0.008	0.011	-0.003***
				-2.777
Driving/travelling	0.073	0.124	0.028	0.095***
				28.838
More than one place	0.065	0.090	0.043	0.047***
				14.847
Standard place	0.853	0.778	0.918	-0.139***
(employer's premises)				*30.900*
Non-standard time				
Mornings only	0.056	0.016	0.091	-0.074***
				-25.233
Other parts of the day	0.073	0.039	0.103	-0.064***
				-19.173
Varying patterns	0.079	0.081	0.078	0.003
				0.902
Rotating shifts	0.095	0.130	0.064	0.065***
				17.333
Standard time	0.697	0.734	0.664	0.070***
(during the day)				*11.771*
Non-standard hours				
< 16 a week	0.093	0.028	0.150	-0.123***
				-33.370
16-29 a week	0.131	0.018	0.228	-0.210***
				-50.740
> 48 a week	0.172	0.288	0.071	0.216***
				46.252
Standard hours	0.604	0.666	0.550	0.116***
(30-48 a week)				*18.527*
Any non-standard employment	0.549	0.587	0.515	0.072***
				11.285
Number of person-wave observations	24,007	11,186	12,821	

Note: Figures may not add up to one due to rounding. "Gender gap" is the difference in average male rates and average female rates. The value of the *t*-test for the significance of the difference is reported in italics.
     *** significant at 0.01 level.

Table 2: Distribution of union coverage and PRP by gender

	Men		Women		
	Unweighted	Weighted	Unweighted	Weighted	**Gender gap**
Union	0.547	0.546	0.507	0.504	0.040***
					6.206
PRP	0.364	0.363	0.213	0.211	0.151***
					26.270
Union, non-PRP	0.354	0.354	0.405	0.405	-0.051***
					-8.134
Non-union, PRP	0.171	0.171	0.111	0.111	0.060***
					13.422
Union and PRP	0.193	0.192	0.102	0.099	0.144***
					20.220
Non-union and non-PRP	0.282	0.283	0.381	0.385	-0.100***
					-16.464
Number of person-wave obs.	11,186	11,183	12,821	12,814	

Note: Figures may not add up to one due to rounding. "Gender gap" is the difference in the unweighted average male rates and the unweighted average female rates. The value of the *t*-test for the significance of the difference is reported in italics.

      *** significant at 0.01 level.

Table 3a: Distribution of union coverage and performance-related pay (PRP) by flexible forms of employment – Men

	Union	Non-union	*t*-test of difference	PRP	Non-PRP	*t*-test of difference
Non-standard contract						
Seasonal/casual	0.025	0.055	*-8.100****	0.014	0.052	*-10.042****
Fixed-term contract	0.028	0.031	*-0.955*	0.015	0.038	*-6.936****
Standard contract (permanent contract)	0.947	0.914	*6.836****	0.971	0.910	*12.378****
Non-standard place						
Working at home	0.007	0.008	*-0.987*	0.007	0.008	*-0.441*
Driving/travelling	0.133	0.113	*3.220****	0.132	0.119	*2.078***
More than one place	0.085	0.096	*-1.931**	0.092	0.089	*0.453*
Standard place (employer's premises)	0.775	0.783	*-1.012*	0.769	0.784	*-1.867**
Non-standard time						
Mornings only	0.015	0.018	*-0.998*	0.020	0.015	*2.009***
Other parts of the day	0.041	0.036	*1.513*	0.032	0.043	*-3.022****
Varying patterns	0.083	0.078	*0.991*	0.071	0.087	*-2.874****
Rotating shifts	0.195	0.050	*-23.249****	0.117	0.137	*-3.041****
Standard time (during the day)	0.665	0.818	*-18.525****	0.760	0.718	*4.834****
Non-standard hours						
< 16 a week	0.013	0.046	*-10.774****	0.006	0.040	*-10.692****
16-29 a week	0.015	0.022	*-2.929****	0.010	0.023	*-4.892****
> 48 a week	0.250	0.339	*-9.836****	0.329	0.264	*7.305****
Standard hours (30-48 a week)	0.723	0.597	*14.088****	0.655	0.673	*-1.907**

Note: Figures may not add up to one due to rounding. The column labelled "*t*-test of difference" reports the value of the *t*-statistic for the average difference in union and non-union rates and PRP and non-PRP rates.

*** significant at 0.01 level, ** significant at 0.05 level, * significant at 0.10 level.

Table 3b: Distribution of union coverage and PRP by flexible forms of employment – Women

	Union	Non-union	*t*-test of difference	PRP	Non-PRP	*t*-test of difference
Non-standard contract						
Seasonal/casual	0.042	0.085	*-10.033****	0.024	0.073	*-9.415****
Fixed-term contract	0.044	0.022	*6.884****	0.009	0.040	*-8.005****
Standard contract (permanent contract)	0.914	0.893	*4.079****	0.967	0.887	*12.659****
Non-standard place						
Working at home	0.002	0.021	*-10.512****	0.009	0.012	*-1.084*
Driving/travelling	0.034	0.023	*3.720****	0.027	0.029	*-0.566*
More than one place	0.047	0.039	*2.181***	0.030	0.047	*-3.894****
Standard place (employer's premises)	0.918	0.917	*0.131*	0.934	0.912	*3.627****
Non-standard time						
Mornings only	0.063	0.119	*-11.182****	0.061	0.098	*-5.975****
Other parts of the day	0.086	0.121	*-6.600****	0.076	0.111	*-5.303****
Varying patterns	0.077	0.079	*-0.404*	0.058	0.083	*-4.323****
Rotating shifts	0.086	0.042	*10.236****	0.047	0.069	*-4.204****
Standard time (during the day)	0.688	0.639	*5.945****	0.757	0.639	*11.732****
Non-standard hours						
< 16 a week	0.093	0.210	*-18.691****	0.071	0.172	*-13.181****
16-29 a week	0.216	0.241	*-3.279****	0.190	0.239	*-5.396****
> 48 a week	0.079	0.063	*3.390****	0.078	0.069	*1.529*
Standard hours (30-48 a week)	0.612	0.486	*14.376****	0.661	0.520	*13.256****

Note: See note of Table 3a.

      *** significant at 0.01 level, ** significant at 0.05 level, * significant at 0.10 level.

Table 4: Estimated marginal effects of flexible forms of employment on the likelihood of union coverage and PRP by gender

	Men (N=11,186)				Women (N=12,821)			
	[1] Pooled probit		[2] Bivariate probit		[1] Pooled probit		[2] Bivariate probit	
	Union	PRP	Union	PRP	Union	PRP	Union	PRP
Baseline probability	0.567	0.336	0.560	0.341	0.538	0.179	0.529	0.184
Non-standard contract								
Seasonal/casual work	-0.050	-0.159***	-0.051	-0.158***	-0.161***	-0.092***	-0.160***	-0.089***
	(1.241)	(4.629)	(1.266)	(4.595)	(5.209)	(5.237)	(5.161)	(5.132)
Fixed-term contract	-0.063	-0.141***	-0.063	-0.141***	-0.087**	-0.091***	-0.084**	-0.090***
	(1.433)	(3.596)	(1.443)	(3.606)	(2.080)	(3.878)	(2.010)	(3.835)
Non-standard place								
Working at home	0.014	0.097	0.015	0.093	-0.412***	-0.055	-0.417***	-0.052
	(0.114)	(1.511)	(0.137)	(1.401)	(4.708)	(1.127)	(4.776)	(1.106)
Driving/travelling	0.018	0.042*	0.018	0.042*	-0.048	0.018	-0.050	0.019
	(0.597)	(1.769)	(0.627)	(1.779)	(1.096)	(0.655)	(1.176)	(0.678)
More than one place	-0.021	0.048**	-0.020	0.045*	-0.022	-0.015	-0.022	-0.013
	(0.706)	(1.975)	(0.633)	(1.930)	(0.538)	(0.645)	(0.567)	(0.602)
Non-standard time								
Mornings only	-0.086	0.213***	-0.084	0.213***	-0.085**	-0.004	-0.086**	-0.005
	(1.272)	(3.491)	(1.214)	(3.494)	(2.336)	(0.176)	(2.379)	(0.220)
Other parts of the day	0.232***	0.003	0.233***	0.005	0.081**	0.014	0.081**	0.014
	(6.140)	(0.077)	(6.152)	(0.113)	(2.355)	(0.650)	(2.372)	(0.649)
Varying patterns	0.096***	-0.009	0.094***	-0.010	0.039	0.002	0.041	0.001
	(2.978)	(0.315)	(2.922)	(0.336)	(1.197)	(0.110)	(1.230)	(0.024)
Rotating shifts	0.217***	-0.015	0.218***	-0.015	0.104***	-0.003	0.102***	-0.003
	(7.181)	(0.566)	(7.246)	(0.578)	(2.804)	(0.149)	(2.772)	(0.104)
Non-standard hours								
< 16 a week	-0.403***	-0.195**	-0.406***	-0.198**	-0.190***	-0.086***	-0.192***	-0.084***
	(3.705)	(2.060)	(3.761)	(2.090)	(4.134)	(3.146)	(4.175)	(3.225)
16-29 a week	-0.362***	0.036	-0.363***	0.032	-0.067	-0.039	-0.070	-0.039
	(3.355)	(0.342)	(3.378)	(0.314)	(1.582)	(1.452)	(1.632)	(1.468)
> 48 a week	-0.091***	0.025	-0.090***	0.025	-0.088***	0.007	-0.085***	0.007
	(4.522)	(1.608)	(4.490)	(1.621)	(2.922)	(0.396)	(2.875)	(0.400)
ρ			0.130***				0.134***	
			[18.071]				[19.001]	

Log likelihood	-5,236	-6,418	-11,631	-5,603	-5,513	-11,093
Model χ²	1,167.0	521.8	6,808.2	2,042.9	691.2	8,856.6
	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]

Note: Absolute *t*-ratios are reported in parentheses. The *t*-ratios are computed using standard errors that are robust to arbitrary forms of heteroskedasticity. *N* is the number of person-wave observations. The term ρ is the correlation of the disturbances in the union coverage and PRP equations. The Wald statistic for the significance of ρ (which is asymptotically χ^2 with one degree of freedom) is in square brackets. The critical value for $\chi^2(1)$ at 99 percent level is 6.63. Model χ^2 is the Wald statistic for the goodness-of-fit test and is equal to $-2[L_R-L_U]$ where L_R is the constant-only log-likelihood value and L_U is the log-likelihood value reported in the table. Its corresponding *p*-value is reported in square brackets. The χ^2 has 66 degrees of freedom in the pooled probit model and 132 degrees of freedom in the bivariate probit model. All regressions also include: number of children by age group (two age groups: 0-4 years of age and 5-16 years of age), years of experience in part-time work and full-time work, ratio of local unemployment to local vacancies, and dummy variables for age groups (3 dummies), cohort of entry in the labour market (4), disability status, marital status (2), education (5), region of residence (6), house tenure (2), part-time employment status, industry (9), occupation (8), sector (4), firm size (3), and a constant.

*** significant at 0.01 level, ** significant at 0.05 level, * significant at 0.10 level.

Table 5: Trend effects in union coverage and PRP across forms of flexible employment by gender

	Men (N=11,186)		Women (N=12,821)	
	Union	PRP	Union	PRP
Linear time trend	-0.010**	0.001	-0.002	0.005*
	(2.189)	(0.140)	(0.401)	(1.684)
Deviation from trend of:				
Seasonal/casual work	-0.020	-0.010	-0.002	0.004
	(1.006)	(0.461)	(0.113)	(0.421)
Fixed-term contract	-0.021	-0.033*	0.015	0.007
	(1.056)	(1.734)	(0.861)	(0.446)
Working at home	-0.017	-0.051	-0.003	-0.002
	(0.522)	(1.636)	(0.067)	(0.084)
Driving/travelling	-0.0002	0.004	-0.032*	-0.012*
	(0.027)	(0.421)	(1.901)	(1.673)
More than one place	-0.008	-0.007	-0.006	-0.008
	(0.765)	(0.706)	(0.417)	(0.721)
Mornings only	0.001	-0.032	0.008	0.003
	(0.021)	(1.424)	(0.608)	(0.354)
Other parts of the day	0.008	-0.004	-0.0003	-0.003
	(0.449)	(0.272)	(0.027)	(0.350)
Varying patterns	0.035***	0.018	0.024**	-0.001
	(2.822)	(1.625)	(1.978)	(0.101)
Rotating shifts	-0.006	-0.004	-0.0002	0.008
	(0.531)	(0.464)	(0.014)	(0.743)
< 16 a week	0.012	0.071**	-0.006	-0.001
	(0.429)	(2.408)	(0.566)	(0.106)
16-29 a week	-0.020	-0.035	-0.002	0.007
	(0.722)	(1.137)	(0.264)	(1.182)
> 48 a week	0.011	-0.003	-0.023**	-0.001
	(1.548)	(0.558)	(2.007)	(0.109)

Note: Absolute *t*-ratios are reported in parentheses. The *t*-ratios are computed using standard errors that are robust to arbitrary forms of heteroskedasticity. *N* is the number of person-wave observations. Figures are marginal effects (obtained from probit regression models) of a linear time trend and its interaction with each of the non-standard types of employment. For other variables included in each of the regressions, see footnote of Table 4.

  *** significant at 0.01 level, ** significant at 0.05 level, * significant at 0.10 level.

Table 6: Gender differences in the effect of flexible forms of employment on the likelihood of union coverage and PRP

	Union		PRP	
	Difference	/t-test/	Difference	/t-test/
Non-standard contract				
Seasonal/casual work	0.111**	*2.180*	-0.067	*0.293*
Fixed-term contract	0.024	*0.364*	-0.050	*0.160*
Non-standard place				
Working at home	0.426***	*3.063*	0.152*	*1.811*
Driving/travelling	0.066	*1.240*	0.024	*0.330*
More than one place	0.001	*0.003*	0.063	*1.635*
Non-standard time				
Mornings only	-0.001	*0.028*	0.217***	*3.068*
Other parts of the day	0.151***	*3.461*	-0.011	*0.341*
Varying patterns	0.057	*1.327*	-0.011	*0.296*
Rotating shifts	0.133***	*2.776*	-0.012	*0.242*
Non-standard hours				
< 16 a week	-0.213*	*1.915*	-0.109	*0.708*
16-29 a week	-0.295***	*2.598*	0.075	*0.853*
> 48 a week	-0.003	*0.144*	0.018	*0.465*

Note: Figures report the gender differences (male-female) in the effects of flexible employment on union coverage and PRP obtained from the pooled probit regressions reported in Table 4. |*t*-test| (reported in italics) is the level of significance (in absolute value) of the gender difference. A positive value of the difference means that the effect for men is greater than the corresponding value for women (that is, either more positive or less negative).

*** significant at 0.01 level, ** significant at 0.05 level, * significant at 0.10 level.

Table 7: Gender differences in the effect of flexible forms of employment on the likelihood of union coverage and PRP by occupation

	White collar			Pink collar			Blue collar		
	Men	Women	Gender difference	Men	Women	Gender difference	Men	Women	Gender difference
Union									
Baseline probability	0.529	0.678	-0.149	0.551	0.439	0.112	0.571	0.449	0.122
Non-standard contract									
Seasonal/casual work	-0.181	-0.152**	-0.029	-0.054	-0.159***	0.105	-0.053	-0.109*	0.056
	(1.307)	(2.020)	0.032	(0.854)	(4.516)	1.575	(1.048)	(1.892)	0.751
Fixed-term contract	-0.016	-0.047	0.031	-0.171**	-0.115**	-0.056	-0.036	-0.116	0.080
	(0.221)	(0.876)	0.451	(1.996)	(2.228)	(0.288)	(0.576)	(0.987)	0.619
Non-standard place									
Working at home	-0.175	-0.306**	0.131	0.143	-0.391***	0.534***	0.344**	-0.306**	0.650***
	(1.303)	(2.378)	1.167	(0.842)	(3.178)	2.742	(2.522)	(2.035)	3.241
Driving/travelling	0.003	-0.017	0.020	0.100*	-0.018	0.118	0.084**	-0.135	0.219**
	(0.065)	(0.351)	0.304	(1.813)	(0.251)	1.522	(2.156)	(1.415)	2.123
More than one place	-0.126***	0.018	-0.144**	-0.044	-0.090	0.046	0.118***	0.058	0.060
	(2.853)	(0.463)	2.113	(0.669)	(1.283)	0.749	(2.727)	(0.726)	0.773
Non-standard time									
Mornings only	-0.416*	0.005	-0.421*	-0.068	-0.064	-0.004	-0.006	-0.183***	0.177
	(1.888)	(0.074)	1.751	(0.556)	(1.471)	0.003	(0.060)	(2.830)	1.580
Other parts of the day	0.275***	-0.013	0.288***	0.217***	0.006	0.211***	0.223***	0.101	0.122*
	(3.029)	(0.222)	2.581	(3.815)	(0.141)	2.957	(4.414)	(1.515)	1.867
Varying patterns	0.090*	0.022	0.068	0.152***	0.004	0.148**	0.114**	-0.002	0.116
	(1.758)	(0.635)	0.854	(2.930)	(0.107)	2.385	(2.328)	(0.021)	1.168
Rotating shifts	0.184***	0.114***	0.070	0.218***	0.043	0.175***	0.244***	-0.043	0.287***
	(3.001)	(2.802)	0.059	(4.407)	(0.901)	2.645	(6.225)	(0.469)	3.112
Non-standard hours									
< 16 a week	-0.345	-0.129	-0.216	-0.434***	-0.139***	-0.295	-0.246	-0.267**	0.021
	(1.271)	(1.590)	0.652	(3.357)	(2.661)	0.092	(0.884)	(2.418)	0.144
16-29 a week	-0.480**	-0.103	-0.377	-0.349***	-0.016	0.333	-0.143	-0.149	0.006
	(2.272)	(1.512)	1.610	(2.597)	(0.322)	0.481	(0.517)	(1.350)	0.042
> 48 a week	-0.150***	-0.060**	-0.090	-0.120***	-0.138**	0.018	-0.056**	-0.071	0.015
	(4.603)	(1.993)	1.340	(2.924)	(2.528)	0.081	(1.964)	(0.873)	0.184
Log likelihood	-1,891	-1,233		-1,004	-3378		-2,172	-881	
Model χ^2	503.0	680.3		258.6	904.7		581.9	339.3	
	[0.0000]	[0.0000]		[0.0000]	[0.0000]		[0.0000]	[0.0000]	

PRP

Baseline probability	0.395	0.199	0.196	0.278	0.233	0.045	0.376	0.183	0.193
Non-standard contract									
Seasonal/casual work	-0.253***	-0.079	-0.174**	-0.170***	-0.118***	0.052	-0.155***	-0.055	-0.100*
	(2.683)	(1.622)	*1.983*	(4.808)	(5.819)	*0.788*	(3.271)	(1.445)	*1.839*
Fixed-term contract	-0.116*	-0.062*	-0.054	-0.141**	-0.129***	-0.012	-0.188***	-0.074	-0.114*
	(1.895)	(1.746)	*0.019*	(2.534)	(4.014)	*0.408*	(3.596)	(1.123)	*1.881*
Non-standard place									
Working at home	-0.023	-0.015	-0.008	0.606***	-0.048	0.654***	-0.101	0.005	-0.106
	(0.310)	(0.208)	*0.017*	(3.969)	(0.654)	*3.626*	(0.618)	(0.049)	*0.474*
Driving/travelling	0.056	-0.0002	0.056	0.146***	0.038	0.108**	-0.030	-0.019	-0.011
	(1.279)	(0.004)	*0.766*	(3.276)	(0.830)	*2.186*	(0.981)	(0.306)	*0.014*
More than one place	0.028	-0.026	0.054	0.017	0.013	0.004	-0.029	-0.090**	0.061*
	(0.761)	(0.885)	*1.163*	(0.298)	(0.325)	*0.018*	(0.853)	(2.106)	*1.667*
Non-standard time									
Mornings only	-0.002	-0.007	0.005	0.080	-0.049*	0.129	0.246***	0.051	0.195*
	(0.009)	(0.120)	*0.040*	(0.773)	(1.718)	*1.327*	(3.532)	(1.197)	*1.707*
Other parts of the day	-0.164	-0.025	-0.139	-0.119**	-0.039	-0.080	0.041	0.043	-0.002
	(1.547)	(0.443)	*0.898*	(2.334)	(1.466)	*1.343*	(0.802)	(1.016)	*0.313*
Varying patterns	0.048	-0.021	0.069	-0.078**	-0.048*	0.030	-0.053	0.044	0.097
	(1.060)	(0.688)	*1.213*	(2.044)	(1.930)	*0.447*	(1.216)	(0.856)	*1.352*
Rotating shifts	-0.066	-0.017	-0.049	-0.086*	-0.044	-0.042	-0.019	-0.050	0.031
	(1.169)	(0.489)	*0.451*	(1.855)	(1.445)	*0.583*	(0.600)	(1.292)	*0.919*
Non-standard hours									
< 16 a week	-0.068	-0.039	-0.039	-0.126	-0.113***	-0.013	-0.229	-0.015	-0.214
	(0.385)	(0.518)	*0.010*	(1.020)	(3.168)	*0.038*	(1.060)	(0.254)	*0.898*
16-29 a week	0.028	0.045	-0.017	0.004	-0.051	0.055	0.121	-0.035	0.156
	(0.213)	(0.673)	*0.249*	(0.027)	(1.427)	*0.447*	(0.423)	(0.620)	*0.602*
> 48 a week	0.061**	0.012	0.049*	-0.0001	-0.010	0.010	0.015	0.011	0.004
	(2.427)	(0.534)	*1.894*	(0.003)	(0.281)	*0.226*	(0.686)	(0.273)	*0.029*
Log likelihood	-2,332	-1,464		-1,174	-3,217		-2,175	-811	
Model χ^2	331.9	313.0		220.6	377.4		237.9	133.3	
	[0.0000]	[0.0000]		[0.0000]	[0.0000]		[0.0000]	[0.0000]	
Number of person-wave observations	4,190	3,793		2,524	6,946		4,472	2,082	

Note: Figures are marginal effects obtained from pooled probit regressions. The *t*-ratios (absolute values are in parentheses) are computed using standard errors that are robust to arbitrary forms of heteroskedasticity. For the other variables included in each regression and definitions, see footnote of Table 4. The gender difference refers to the (male-female) difference in the effects of flexible employment on union coverage and PRP within each occupation. The absolute value of the *t*-test of the significance of the gender difference is reported in italics.

*** significant at 0.01 level, ** significant at 0.05 level, * significant at 0.10 level.

Table 8: Gender differences in the effect of flexible forms of employment on the likelihood of union coverage and PRP by sector

	Private sector			Non-private sector		
	Men	Women	Gender difference	Men	Women	Gender difference
Union						
Baseline probability	0.417	0.270	0.147	0.916	0.859	0.057
Non-standard contract						
Seasonal/casual work	-0.043	-0.105***	0.062*	-0.082***	-0.082***	0.0001
	(1.092)	(4.071)	*1.825*	(2.585)	(2.894)	*0.949*
Fixed-term contract	-0.024	-0.054	0.030	-0.088***	-0.039	-0.049**
	(0.486)	(1.060)	*0.548*	(3.562)	(1.435)	*2.068*
Non-standard place						
Working at home	0.277**	-0.240***	0.517***	-0.233***	-0.547***	0.314**
	(1.962)	(3.249)	*3.692*	(3.118)	(4.546)	*2.137*
Driving/travelling	0.068**	-0.065	0.133**	0.018	0.031	-0.013
	(2.073)	(1.266)	*2.054*	(1.276)	(1.169)	*0.327*
More than one place	0.034	-0.006	0.040	-0.019	0.004	-0.023
	(1.035)	(0.151)	*0.691*	(1.221)	(0.156)	*1.019*
Non-standard time						
Mornings only	-0.068	-0.041	0.027	-0.009	-0.116***	0.107*
	(0.872)	(1.145)	*0.215*	(0.418)	(3.945)	*1.890*
Other parts of the day	0.249***	0.070**	0.179***	0.025	-0.045	0.070**
	(5.513)	(2.115)	*2.886*	(1.522)	(1.605)	*2.009*
Varying patterns	0.143***	0.073**	0.070	-0.012	-0.056**	0.044
	(3.924)	(2.197)	*1.147*	(0.809)	(2.079)	*0.544*
Rotating shifts	0.279***	0.043	0.236***	0.017	0.042*	-0.025
	(7.640)	(1.030)	*3.823*	(1.205)	(1.762)	*0.053*
Non-standard hours						
< 16 a week	-0.325***	-0.090**	-0.235**	-0.236**	-0.138***	-0.098
	(3.825)	(2.049)	*2.462*	(2.223)	(3.390)	*1.088*
16-29 a week	-0.271***	-0.025	-0.246**	-0.132**	-0.061*	-0.071
	(2.833)	(0.588)	*2.352*	(2.020)	(1.940)	*1.222*
> 48 a week	-0.083***	-0.074**	-0.009	-0.046***	-0.075**	0.029
	(3.932)	(2.473)	*0.243*	(3.022)	(2.359)	*0.579*
Log likelihood	-4,763	-4,128		-534	-1,613	
Model χ^2	630.1	498.8		327.5	448.1	
	[0.0000]	[0.0000]		[0.0000]	[0.0000]	

PRP

Baseline probability	0.418	0.264	0.154	0.163	0.059	0.104
Non-standard contract						
Seasonal/casual work	-0.177***	-0.140***	-0.037	-0.093*	-0.020	-0.073
	(4.555)	(5.060)	0.042	(1.756)	(1.231)	1.061
Fixed-term contract	-0.153***	-0.211***	0.058**	-0.089**	-0.010	-0.079
	(3.164)	(5.645)	2.501	(2.207)	(0.635)	1.607
Non-standard place						
Working at home	0.158*	-0.041	0.199*	0.006	-0.032	0.038
	(1.922)	(0.554)	1.683	(0.078)	(0.783)	0.670
Driving/travelling	0.009	0.095**	-0.086	-0.003	-0.023	0.020
	(0.354)	(1.958)	1.607	(0.093)	(1.290)	0.928
More than one place	-0.009	0.006	-0.015	0.072**	-0.017	0.089**
	(0.311)	(0.137)	0.273	(2.138)	(1.038)	2.273
Non-standard time						
Mornings only	0.090	-0.034	0.124	0.141**	0.014	0.127
	(1.210)	(1.031)	1.560	(2.001)	(0.625)	1.280
Other parts of the day	0.003	-0.028	0.031	-0.012	0.076***	0.088
	(0.074)	(0.917)	0.633	(0.164)	(2.799)	1.436
Varying patterns	0.019	-0.014	0.033	-0.100***	-0.005	-0.095**
	(0.578)	(0.460)	0.731	(2.941)	(0.267)	2.107
Rotating shifts	-0.033	0.004	-0.037	-0.027	-0.016	-0.011
	(1.065)	(0.114)	0.722	(0.876)	(0.762)	0.029
Non-standard hours						
< 16 a week	-0.125	-0.087*	-0.038	-0.003	-0.001	-0.002
	(0.925)	(1.931)	0.139	(0.692)	(0.347)	0.006
16-29 a week	0.126	-0.0001	0.126	0.032	0.009	0.023
	(0.874)	(0.003)	0.821	(0.456)	(0.501)	0.204
> 48 a week	0.025	-0.028	0.053*	-0.009	0.043**	-0.052*
	(1.440)	(1.074)	1.646	(0.377)	(1.962)	1.828
Log likelihood	-5,335	-4,230		-1,008	-1,206	
Model χ^2	362.7	455.9		241.0	175.3	
	[0.0000]	[0.0000]		[0.0000]	[0.0000]	
Number of person-wave observations	8,535			2,651		

Note: Non-private sector includes civil service (including central government), local government (town hall, etc.), other public (higher education, NHS, and nationalised industries) and non-profit organisations. For other definitions, see footnote of Table 7.

    *** significant at 0.01 level, ** significant at 0.05 level, * significant at 0.10 level.

Table A1
Definition and means of variables

Variable	Definition	Men	Women
Age:			
Age 16-25	Age group (with age measured at the entry into the panel): 16-25	0.249	0.234
Age 26-35	Age group: 26-35	0.326	0.301
Age 36-45 (base)	Age group: 36-45	0.259	0.267
Age 46-60	Age group: 46-60	0.166	0.198
Disabled	Registered as disabled either with social services or a green card	0.014	0.010
Marital status:			
Never married	Never being legally married or lived in a cohabiting union	0.272	0.198
Married or cohab. (base)	Legally married or living in a couple as partners at interview date	0.679	0.704
Other marital status	Separated, divorced or widow at interview date	0.049	0.098
Number of children 0-4	Number of children aged less than 5 (years) in the household	0.186	0.131
Number of children 5-16	Number of children aged 5-16 in the household	0.524	0.564
House tenure:			
House owner (base)	Outright or mortgage house owner	0.818	0.798
Renting	Living in a privately rented accommodation	0.083	0.077
Local authority housing	Living in local authority and housing association rented accommodation	0.099	0.125
Region of residence	Seven regional dummy variables: Greater London (base), Rest of South, East Anglia and Midlands, North West (incl. Manchester), North East, Wales and Scotland		
Education:			
No qualification (base)	Respondent does not report any academic qualification	0.141	0.168
Less than O level/GCSE	Respondent has some qualification but short of O-level or GCSE	0.084	0.108
O level/GCSE	Highest educational qualification is one or more "Ordinary"-level qualifications (later replaced by General Certificate of Secondary Education), taken at end of compulsory schooling at age 16	0.210	0.282
A level	Highest educational qualification is one or more "Advanced"-level qualifications, representing university entrance-level qualification, taken typically at age 18	0.162	0.118
Vocational qualification	Higher-level vocational qualifications (e.g., HNC, HND, teaching and nursing)	0.258	0.212
University qualification or higher	University degree or above	0.145	0.112
Cohort of entry:			
Cohort 1 (base)	Entered the labour market before 1965	0.088	0.090
Cohort 2	Entered the labour market 1966-1975	0.248	0.159
Cohort 3	Entered the labour market 1976-1983	0.202	0.237
Cohort 4	Entered the labour market 1984-1990	0.394	0.431
Cohort 5	Entered the labour market 1991-1997	0.068	0.083
Full-time experience	Full-time work experience since labour market entry (years)	17.081	10.177
Part-time experience	Part-time work experience since labour market entry (years)	0.236	4.737
In part-time employment	Part-time employment status (fewer than 30 hours of work per week)	0.051	0.410
Firm size:			
Size1-24	Firm size: fewer than 25 employees at the establishment	0.261	0.385
Size25-99	Firm size: 25-99 employees at the establishment	0.252	0.246
Size100-499	Firm size: 100-499 employees at the establishment	0.286	0.223
Size 500 plus (base)	Firm size: 500 or more employees at the establishment	0.201	0.146
Sector:			
Civil service	Works in the civil service and central government	0.049	0.039
Local government	Works in local government, town hall, etc.	0.104	0.189
Other public	Works in the NHS, higher education, and nationalised industry	0.059	0.109
Non-profit sector	Works in non-profit organisation (charities, co-operatives, etc.)	0.024	0.048
Private (base)	Works in the private sector (private firm, company, etc.)	0.764	0.615
Occupation:			
Professional	Professional occupation (from the Standard Occupational Classification)	0.107	0.104
Managerial	Managerial occupation	0.165	0.084
Technical	Associate professional and technical occupations	0.102	0.107
Clerical	Clerical and secretarial occupations	0.096	0.293

Craft	Craft and related occupations	0.184	0.026
Service	Personal and protective service occupations	0.067	0.143
Sales	Sales occupations	0.053	0.106
Semi-skilled	Plant and machine operatives	0.147	0.039
Unskilled (base)	Other semi-skilled and unskilled occupations	0.079	0.098
Industry	Ten one-digit Standard Industrial Classification dummy variables: energy, extraction, metal goods, other manufacturing, construction, distribution, transports, banking and finance, other services. Base is primary (agriculture, forestry and fishing).		
U-V ratio	Ratio of local unemployment stock to local vacancy stock. The geographic unit is 306 matched job centres and travel-to-work areas (source is National On-line Manpower Information Service)	15.691	15.538
Number of person-wave observations		11,186	12,821