**Do economic conditions influence union activism behaviour?**

**David Angrave1, Andy Charlwood2 and Ian Greenwood3**

**Abstract**

This article develops and tests the theory that union activism is related to economic conditions using a nationally representative panel of workers from the UK. Results suggest that a fall in real wages of two percentage points and a three percentage point increase in the unemployment rate are both associated with a one tenth increase in the probability that a ‘benchmark’ worker will become a union activist (albeit from a low base). This relationship is largely explained by the behaviour of workers in highly unionised sectors.

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**Introduction**

For industrial democracy to flourish, it is necessary for workers to participate in the bodies and organisations that represent them. With this in mind, this article aims to advance understanding of the conditions that encourage workers to participate in trade unions; this is also important because union activism is a form of collective human agency which has played a historically significant role in determining the practices and processes that shape conditions and relations at work. Further, trade unions rely on the voluntary unpaid activism of their members to function and remain viable (Willman and Bryson, 2007; Willman, et al. 1993) so union activism is a crucial determinant of union effectiveness (Gall and Fiorito 2014). While there is a large research literature examining the psychological antecedents of union activism, this literature does little to further understanding of the role of material economic, social and workplace factors in shaping activism behaviour (Gall and Fiorito, 2012). This omission is significant as it seems likely that much union activism, like union membership, is a response to dissatisfaction with bread and butter issues (Kochan, 1979; Nicholson et al., 1981; Stepina and Fiorito, 1986). This article aims to begin remedying this deficiency.

Specifically, we draw on business cycle theories of union behaviour derived from Commons (1910) and related empirical tests of the relationship between economic variables, union membership and strikes to develop middle range theory and testable hypotheses about how macro-economic conditions might shape union activism behaviour. Then we theorise the micro-level mechanisms that might explain how macro-economic conditions affect individual level activism behaviour and develop hypotheses to test this theory. Our empirical analysis uses the British Household Panel Survey (BHPS), a nationally representative panel survey covering a 16 year period. The BHPS asks respondents whether they were ‘active in a trade union or staff association’. The longitudinal nature of the data allow us to use panel econometric techniques to take into account and control for time invariant aspects of personality that might also shape activism behaviour.

**The incidence and determinants of union activism: existing theory and evidence**

Note first that union activism is conditional on membership, so correlated with, but distinct from it. Membership and activism can be conceived as different behaviours related to a continuum of attitudes towards unions, from outright hostility to strong emotional commitment. Definitions of union activism vary; different measures include different lists of activities that are considered as activism behaviours, some defining it very broadly in terms of simply attending meetings and participating in elections, reading documents and discussing union activities with co-workers, others as measures of willingness to work for a union, including more time intensive behaviours such as taking on a representative role or holding elected union office (Fiorito et al., 2014: 4). The most recent comprehensive survey of union activism dates from the 2005 – 2006 World Values Survey, which found that 52 per cent of union members in Britain reported that they were active in their trade union – a figure closely comparable to equivalent results from the USA and Canada, although other sources of evidence suggest activism levels are far lower, a difference probably attributable to the different definitions of activism used (Fiorito et al., 2014: 4).

There is an extensive literature on the psychological antecedents of union commitment. Willingness to work for a union, an indicator of activism, is included in the most commonly used measure of union commitment (that of Gordon et al.., 1980) so it is unsurprising that longitudinal studies suggest that union commitment has a causal relationship with union activism (Fullager and Barling, 1989; Fullager et al.., 2004). However, most studies of union commitment are based on cross-sectional samples of a single occupation or workplace. Consequently, consistent and robust findings are rare. One meta-analysis has found that pro-union attitudes were a strong predictor of union commitment, with perceived union instrumentality acting as a weaker predictor (Bamberger et al., 1999). Another meta-analysis found that there is relationship between job satisfaction and union commitment, which is moderated by the industrial relations climate, with a negative relationship where the industrial relations climate is poor and a positive relationship when the industrial relations climate is good (Fuller and Hester, 1998). What is missing from these studies is any evidence or analysis of how contextual factors, like material living and working conditions shape union commitment and activism (Gall and Fiorito, 2012: 199; Sverkeand Kuruvilla, 1995).

A second significant limitation of the union commitment literature is its focus on attitudinal (or affective) commitment to unions, which is conceptually distinct from calculative or instrumental commitment (Snape et al., 2000: 216). This partial focus is significant because Nicholson and his colleagues (1981) suggest that a simple dichotomy between activists and non-activists is unhelpful, and instead posit that there is a continuum of member types, from passive dues payers through to ideological activists. They identify three specific types who are likely to participate in union activism: selective activists, apolitical stalwarts and ideological activists. Of these they argue, the selective activists, who participate in union activism for instrumental reasons constitute both the largest group of union members and the largest group who could be considered activists. This group may be beyond the purview of the union commitment literature because, in contrast to the apolitical stalwarts and ideological activists, they are not (primarily) active as a result of affective commitment. In order to overcome this limitation, it is necessary to incorporate insights from economics, sociology and industrial relations. Specifically, there is a body of theory and evidence which suggests that union behaviour is influenced by economic factors and economistic concerns. The next section will outline this theory and develop testable hypotheses

**Trade union activism and the business cycle: theory and hypotheses**

The idea that the business cycle has a role in shaping the union behaviour of employees originated with Commons (1910) who argued that inflation acts as a spur for employees to organize themselves into unions and to go on strike in order to protect their living standards from erosion. At the same time, employers have an incentive to give in to employee demands quickly during boom conditions that often cause inflation, because they do not want costly interruptions to production or service delivery. Conversely, during downturns employers are better able to resist unions because employers can run down accumulated inventory during interruptions to production. Empirical research suggests that the business cycle affects different aspects of union behaviour in different ways.

Empirical support for Commons’ theory comes from analysis of aggregate time-series data on union membership density in the USA (Ashenfelter and Pencavel, 1969), Great Britain (Disney, 1990; Carruth and Disney, 1988; Booth, 1983; Bain and Elsheikh, 1976; Hines 1964), Australia and Sweden (Bain and Elsheikh, 1976). However, these models were unable to predict the sustained decline in union membership after 1980 (Western, 1995), leading Carruth and Disney to argue that it was the rate of real wage growth, not the business cycle per se, which determined union membership, with employees having less incentive to unionise when real wage growth is positive (Carruth and Disney, 1988, Disney, 1990). There is also evidence that strike incidence and duration is affected by the business cycle, with a higher number of short strikes during boom periods of high inflation and a smaller number of long strikes as workers resists redundancies, restructuring and work intensification during downturns (Devereux and Hart, 2011; Franzosi, 1995; 1989; McConnell, 1990; Harrison and Stewart, 1989; Kennan, 1985).

This evidence has not won over sceptics, who have argued that some of the hypotheses derived from Commons’ theory appear arbitrary. The reasons for adopting the particular model specification which results in successful predictions of membership or strike activity are not always clear, nor is it clear precisely how macro-economic conditions affect the micro-level behaviour of individuals (Fiorito, 1982; Richardson, 1977). The theoretical approach appears blind to issues of politics and power (Franzosi, 1989; Hyman, 1971). The lack of consistency in results over time and across different countries (Western, 1995) suggests that at best causal mechanisms are contingent on a specific institutional and political environment and that at worst results are merely the result of statistical chance.

Goldthorpe (2001) has argued that results like those found in studies of the union/business cycle relationship should be treated as provisional until the generative mechanisms underpinning them can be identified more precisely through further research. We are aware of two studies that provide support for business cycle theory by identifying underlying generative mechanisms while at the same time qualifying the theory by demonstrating the limits of its explanatory powers. Franzosi’s seminal study of strikes in Italy demonstrates how the business cycle influenced the behaviour of workers, unions and employers in ways predicted by Commons, while also showing that employers and the state changed policy and behaviour as a result, so that the relationships between the business cycle and strike activity changed over time (Franzosi, 1995). Machin and his colleagues (1995) demonstrated that British employer decisions to recognise unions, and by extension union membership, were related to the business cycle via the mechanism of product market competition at the time an enterprise was established. However, this relationship ceased to operate following the election of the Conservative Government in 1979, a finding compatible with Franzosi’s argument that state and employer strategies change in response to the ways that workers and unions react to the business cycle.

Overall then theory and evidence suggests that economic variables that change with the business cycle have a role in influencing the union behaviour of workers, although this relationship is not as simple or straightforward as some of the early empirical studies based on analysis of aggregate time series data implied. From this we might infer that changes in economic variables might influence workers’ union activism behaviour, because cycles of workplace restructuring and the level of employers pay offers relative to inflation will be somewhat related to changes in economic conditions, and these factors influence workers’ incentives to participate in union activism. However, contradictions between findings in the research discussed above mean that a number of competing hypotheses can be developed:

First, Commons (1910) argued that union activity would rise during booms when inflation was high and rising, as workers looked to unions to protect wages from erosion. H1: union activism will be positively associated with rising inflation.

Second, Disney (1990) modified this argument in the light of his own empirical findings from Britain to argue that it was changes to real wage growth, not changes to the rate of inflation which determined union behaviour, with union membership (and by extension other forms of union activity) falling when real wage growth was strong, because workers had no incentive to engage in union activity. H2: union activism will be negatively associated with real wage growth.

Third, Commons (1910) argued that union membership falls when unemployment rises as union workers are laid off and employers are better able to resist workers claims, so the incentives to engage in union activity fall. Given the overlap between activism and membership, the same incentives may negatively affect propensities to engage in union activism. H3: union activism will be negatively associated with rising unemployment.

Fourth, on the other hand, Franzosi’s research into strike patterns suggests that the number of long strikes increases when unemployment rises, because workers resist managerial attempts to restructure and downsize. Although the incentives for non-union workers to unionise fall, already unionised workers may face increased incentives to act collectively to resist managerially initiated changes that they dislike. It may therefore be the case that the restructuring and downsizing associated with periods of unemployment leads to increased activism. This suggests a hypothesis that directly contradicts H3: therefore H4: union activism will be positively associated with rising unemployment.

Following the approach to quantitative sociological analysis outlined by Goldthorpe (2001), the simple appearance of an association between macro-economic variables and union activism (falsifying the null hypothesis that there is no relationship) is not enough to confirm the plausibility of the underlying theory. It is also necessary to identify the individual level mechanisms that generate the behaviour. Individual level panel data like that provided by the BHPS is ideally suited for this more fine-grained analysis.

Drawing on the ideas of Bain and Elsheikh (1976), theoretically, we can think of two types of measure that might explain how macro-economic conditions influence micro-behaviour. First, measures of the workers’ individual economic position: wage levels, personal financial circumstances, satisfaction or dissatisfaction with the extrinsic aspects of a job. Essentially, these measures alter workers perceptions of the costs and benefits of union activism for the individual, either making it appear more or less costly, or increasing or reducing the potential benefits of activism activity. Second, measures that act as proxies for the institutions of industrial relations at a workplace level: whether the respondent lives in an area of the country where unions have traditionally been strong (Beynon et al., 2012), whether the respondent works in a sector or industry with a relatively high level of unionisation. Workers in highly unionised workplaces with traditions of collective action will be more likely to respond to changes in their personal economic circumstances through union activism than workers in workplaces without a union, because organisation and leadership is needed if individual complaints are to be framed as collective grievances and workers persuaded to participate in collective action (Kelly, 1998; Stepina and Fiorito 1986), and high union density creates social norms which make engagement with the union more likely (Toubǿl and Jensen, 2014). Empirically, we will see evidence of how macro-economic conditions affect individual behaviour if the effects of the macro-economic variables become smaller and non-significant after controls for individual economic position and/or proxies for industrial relations institutions are added to the econometric model. There is no strong theoretical prior for thinking that one or other of these groups of measures will have the most important role in explaining the activism/economic variable relationship. Therefore we predict:

H5: The relationship between of the macro-economic conditions and union activism will become smaller and non-significant after measures that capture the effects of these conditions on individuals’ economic position are added to the model, and/or H6: The relationship between macro-economic conditions and union activism will become smaller and statistically insignificant after measures that capture institutions of industrial relations at the workplace are added to the model.

**Data and methods**

The BHPS began in 1991 with a stratified random population sample comprising residents of 5,538 households aged 16 and over (see Taylor et al., 2010). When a survey participant leaves a household an attempt is made to track them into their new household, which then joins the survey. Similarly, new persons who join a sample household, including new children, are added to the sample. Thus, with the exception of new immigrants who arrive in the country after the study commenced, the survey should remain broadly representative of the population from which it is drawn. A further 2,887 households from Scotland and Wales were added to the survey in 1999 and a further 1,979 households from Northern Ireland were added in 2001. At least one adult member at 74% of all in-scope selected households agreed to an interview at wave one. The annual re-interview rates for the main sample, average around 95%.

*Union activism*

The BHPS included a measure of union activism annually in the 1991 – 95 waves of the survey, and bi-annually after that, with the activism question included in 1997, 1999, 2001, 2003, 2005 and 2007. The question about union activism does not distinguish between different forms of activity, asking simply whether respondents are “active in a trade union” (the question is asked alongside questions about activism in other types of voluntary and civil society groups). While it would be desirable to be able to unpack the different types of behaviour and activity associated with self-reported activism, we believe that this simple, self-defined measure of activism is sufficient for the purposes of this paper. Activism is a commonly used and widely understood term, so BHPS respondents will be well placed to decide whether they are active in a union or not. Further, recent evidence from a faculty union in North America suggests that this type of measure is reasonably well correlated with more behaviourally orientated indicators of activism (Fiorito et al., 2014: 11 – 12). However, understandings of what constitutes activism may vary between survey respondents, so this will inevitably introduce some measurement error to our analysis. The effects of such measurement error is typically to bias the results of empirical analysis downwards. Figure one graphs the responses to this question over the course of the BHPS.

Figure 1 around here.

Figure 1 reports three sets of results, the first are un-weighted on an unbalanced panel, the second are weighted with cross-sectional weights on an unbalanced panel. The third are weighted with longitudinal weights on a balanced panel (i.e. those respondents who participated in all waves of the survey). Looking at the weighted results on the unbalanced panel, approximately 5.3 per cent of employees described themselves as activists in 1991, rising to a high point of 6.6 per cent in 1995, before declining. Decline was arrested between 2001 and 2003, before dropping to 3.9 per cent in 2007. Note that these results relate to the percentage of employees who describe themselves as union activists, if we were to look at the percentage of union members (figure 2) we see a slightly different picture. This shows that around 17 per cent of members described themselves as activists in 1991, rising to around 23 per cent in 1995, falling back to around 17 per cent by 2007.

Insert figure 2 around here.

If people tend to remain activists once they make the initial decision to become activists (as is the case with union membership) it is highly unlikely that macro-economic variables will explain union activism, because changes in economic variables will not explain unchanging behaviour by individuals. In fact, figure three (which graphs the transitions into and out of activism status) shows that activism is a highly transitory state. Overall, just 0.16 of BHPS respondents classified themselves as union activists throughout the period 1991 – 2007, with 16.51 per cent of the balanced panel who were in employment in at least one wave reporting that they considered themselves to be union activists at some point.

Figure 3 around here.

*Macro-economic indicators*

The aggregate measures of inflation, unemployment and real wage growth used in our analysis are reported in table 1, along with annual GDP growth (which is included in the table to provide context).

Insert table 1 around here

*Individual level indicators of the likely perceived costs and benefits of activism*

To investigate whether there are plausible mechanisms to explain the relationship between activism and macro-economic variables our analysis includes both objective and subjective indicators of the economic circumstances of survey respondents, which may alter the calculus of the costs and benefits to activism. First, the hourly wage variable included in the dataset was deflated by the retail price index measure of inflation, to 1991 levels for all waves of the survey. Then we estimated a human capital type equation, where the natural logarithm of hourly wages are seen as being determined by an individual’s gender, age (entered as a continuous variable) and age squared, relationship status, highest educational qualification achieved (no qualifications, high school level qualifications, advanced high school level qualifications, a university degree or a higher university degree), the sector (public private or voluntary), occupation (measured at the 1 digit SOC90 level) and industry (measured at the 1 digit SIC92 level) and the region in which the individual is resident. A predicted log wage for each individual was then generated from the model results, and the predicted log wage was subtracted from the actual log wage. The resulting value was then entered into the model as an independent variable. If actual log wages are lower than predicted, the worker may have a stronger incentive to activism to close the gap with other workers with similar skills and experience. Alternatively, higher than predicted log wages may be an indicator of a union wage premium with the measure effectively acting as an indicator of union power at the respondent’s workplace, sector or industry, so reflecting a higher propensity to activism.

Second, we estimated a similar human capital equation on the determinants of wage change (where the dependent variable was log of hourly wages in the previous wave of the survey subtracted from current log wages) and derived a predicted wage change from the results. Similarly, we then subtracted predicted wage change from the actual wage change and included the results as an independent variable. Note that there is a degree of inter-correlation between the two wage related variables (0.387), but the inter-correlation is not strong enough to prevent both being included. If wage growth is lower than predicted, this may provide an incentive to union activism to try to close the gap.

Third, the BHPS also includes a measure of the subjective financial circumstances of individual respondents, who were asked to report whether they were ‘living comfortably’, ‘doing alright’, ‘just about getting by’ or ‘struggling’. Those who are just getting by or struggling may have a stronger incentive to activism than those who are comfortable.

Fourth, following the earlier discussion, the threat of unemployment may act as a disincentive to activism, because workers may fear that activism will be punished by employers when making decisions about who to make redundant. To capture this potential disincentive, we included a dummy variable derived from retrospective work-life history data and responses to earlier waves of the survey to identify if the respondent reported having previously experienced being laid off, made redundant or dismissed. We expect those with a previous history of involuntary job loss to fear job loss more, so be less likely to engage in activism.

Finally, the BHPS includes measures of job satisfaction, measured on a 7 point scale, where 1 is very dissatisfied and 7 is very satisfied, including satisfaction with wages and job security. Those who are dissatisfied with wages may have an increased incentive to engage in activism to address the source of dissatisfaction, while those who are dissatisfied with job security could either experience increased incentives to activism as they try to address insecurity or they may face disincentives related to the fear of unemployment. We also included measures of satisfaction with hours worked and with work itself as further controls.

*Job and workplace levels controls*

Control variables were included for whether a job was part-time (<35 hours a week); fixed term or temporary in nature; whether there was an active union or staff association at the workplace; whether the workplace employed fewer than 25 employees; broad occupation and industry (measured at the 1 digit SOC and SIC level respectively); and whether the workplace was in the public or voluntary sectors. It might be expected that activism is more common in workplaces with a union, larger workplaces, public sector workplaces and workplaces in particular industries with high levels of unionisation (e.g. transport and communications).

*Individual level controls*

Individual level controls were included for gender, non-white ethnicity, the age of the respondent, highest educational qualification, whether or not the respondent lived in the North and Midlands or England or Wales or Scotland (union membership and support for trade unions is generally higher in these areas of Great Britain than it is in the South and East of England). Controls were also included for survey wave. Within the literature, there is also a suggestion that union activity may be related to support for political parties of the left (Western, 1995). If this is the case, the pattern of activism identified in figure one may simply reflect rising support for the Labour Party prior to 1997 and declining support since. Therefore a control for whether the respondent said that they would intend to vote Labour in an election was included in the model. The mean values of the independent variables included in our analysis are reported in table 2.

[Table 2 about here]

*Methods*

To test our hypotheses, we begin with a simple cross-sectional logit model that pools data over the different years of the survey with the form:

UA*it* = α + *Xit*β + ε*it i* = 1..., *N*; *t* = 1,...., *T*, (1)

Where UA*it* is the self-reported activist status of individual i at time t, *Xit* represents measures of macro-economic conditions. To test hypotheses five and six we estimated a second model:

UA*it* = α + *Xit*β + *Z*it + ε*it i* = 1..., *N*; *t* = 1,...., *T*, (2)

Where *Z*it captures the individual levels determinants of union activism identified in the previous section. If the addition of *Z*it to the model has the effects of making the coefficients for Xit smaller and insignificant then it suggests that the relationship between macro-economic variables and activism is explained by the variables captured by *Z*it1. The problem with this pooled cross-sectional analysis is that results may be biased by omitted variables. Specifically, if any of the variables in our analysis are correlated with the (unobserved) values and attitudes that the union commitment literature suggests shape union commitment and therefore activism, coefficients will be biased upwards. Given research which suggests that values and attitudes are formed in youth and change only slowly (Inglehart, 1977) it seems reasonable to assume that values and attitudes towards unions are relatively time invariant. Therefore we can use the panel nature of our data to control for time invariant individual characteristics. First, we estimate a random effects logit model with the form:

UA*it* = μ + *Xit*β + *Z*itγ + ε*it ,*  (3)

where μ is the individual specific random effect. This model makes the assumption that the individual random effects are not correlated with the independent variables included in the model. If this assumption is incorrect, our results will be biased. We can test this by estimating a fixed effects model, which allows for the assumption that individual specific effects are correlated with independent variables, and comparing the results of the two models using a panel adjusted Hausman test (Hausman, 1978). The results of this test suggest that the random effects model was more efficient than the fixed effects, so the assumptions of the random effects model are appropriate. Therefore we report the random effects results from equation 3 in the results section below.

We estimated these models on an un-weighted and unbalanced panel as this maximised the observations and information we could include in the analysis. Key results were not sensitive to the addition of cross-sectional weights (for the pooled model only) or longitudinal weights on a balanced panel. Observations with missing values were excluded from the analysis. We assume that non-response to individual items in the survey is a random process, so this should not bias results. Additional sensitivity analyses found that our key results were not sensitive to step-wise removal of independent variables and associated changes in the sample size. To test whether our results were biased by panel attrition we followed the procedure set out by Verbeek and Nijman (1992) by estimating additional models with a control for whether a respondent participated in the next wave of the survey. The effects of this attrition control were insignificant, suggesting that panel attrition bias was not a significant issue.

To aid interpretation, results are reported in the form of marginal effects. They can be understood as the change in predicted probability of union activism for a benchmark employee with a particular set of characteristics if the independent variable in question increases by one. So for example, for gender, the marginal effect can be interpreted as the change in probability of union activism if the gender of the respondent changed from male to female, but all other characteristics were held constant. The predicted probability of activism for the benchmark employee is reported at the bottom of table 3. The characteristics of the benchmark employees are reported in table A1 in the appendix.

**Results**

[Table 3 about here]

Look first at column four of table 3. It shows the relationship between macro-economic variables and union activism based on model 1 (above). The national unemployment rate is positively and significantly related to activism – this is in line with H4, therefore H3 is falsified. The relationship between inflation and activism is negative and insignificant (falsifying H1). However, in line with H2, the relationship between real wage growth and activism is negative and significant; employees are less likely to become union activists when real wage growth is strong.

Turning now to column one of table 3, which shows the equivalent results from a random effects logit model. The direction and statistical significance of the results are the same as those from the pooled logit model in column four, but the magnitude of the relationships is much smaller, suggesting that the pooled logit results are biased upwards as a result of correlation between macro-economic variables and individual random effects. Therefore the rest of this section focuses on the random effects results reported in columns one, two and three.

In column two, we add measures of variables that capture the economic position and concerns of the individual employees. The addition of these measures actually increases the size of the marginal effects for unemployment and real wage growth. Therefore the relationship between activism and macro-economic variables is not explained by these measures. Looking in detail at the new results, they show that employees whose pay is higher than the predicted wage for a worker with the same level of human capital (i.e. higher paid employees) are more likely to be union activists. There are two ways of interpreting this result. First, employees with higher levels of unobserved human capital may be more likely to be active in their union; second, there is a wage premium for employees in highly unionized workplaces, where a higher proportion of employees are activists, and this is being picked up by this variable. Although there appears to be a wage premium associated with union activism, employees whose pay has risen more slowly over the previous 12 months relative to predicted wage growth from a human capital equation also more likely to become activists, as were those dissatisfied with their pay; suggesting that grievances over pay act as an incentive to activism. The key point which emerges from all three results is that there is a relationship between individual pay and union activism.

Respondents with previous experience of lay-off, redundancy or dismissal were less likely to become activists as were those who were dissatisfied with job security, suggesting that while in the aggregate, the re-structuring and threat of involuntary job loss that coincides with rising unemployment may promote activism, employees who felt themselves to be most at risk felt strong disincentives to engage in activism. Similarly, those who felt their personal financial position to be precarious were less likely to be activists. Overall, these results suggest that economic insecurity and the direct threat of unemployment have a disciplining effect on workers which is a disincentive to activism.

In column three, we add a full set of controls for individual and job characteristics2. The addition of these variables results in the relationships between macro-economic variables and activism becoming smaller and statistically insignificant, supporting hypothesis 6. This suggests that the relationship between economic variables and union activism operates through specific groups of workers in jobs and workplaces where unions are well organised and there is a tradition of collective action, for example men, workers aged 35 and over, in full-time permanent jobs, in skilled manual occupations, in the Midlands or North of England, Scotland and Wales, in workplaces where a trade union is present, in the public sector and the transport and communications industries. Additional analyses (not reported for reasons of space) found that the relationship between activism and macro-economic indicators was seen most strongly in the public sector. Even after these controls are added, a number of indicators of individual economic circumstances remain statistically significant predictors of activism: the difference between actual and predicted wages and actual and predicted wage growth and (dis)satisfaction with pay and job security. The variable for intention to vote Labour was not statistically significant in the model with a full set of controls.

Given the small size of the marginal effects in the random effects model, what is the quantitative significance of these results? Note first that the predicted probability of being an activist for the ‘baseline worker’ derived from the model reported in column (2) of table three is 0.0125. This assumes an unemployment rate of 4% and annual real wage growth of 2%. Note second that the marginal effects for unemployment and real wage growth can be interpreted as the change associated with a one percentage point change in unemployment or wage growth. Therefore, if real wage growth changed from 2% a year to -5% a year, the probability of activism for our benchmark individual would rise from 0.0125 to 0.0174 (a 39% increase). Similarly, if unemployment rose from 4% to 10%, the probability of activism would rise from 0.0125 to 0.0149 (a 19% increase). This suggests that falling real wages and rising unemployment exert moderate but quantitatively significant effects on workers’ propensities to union activism.

**Discussion and conclusions**

The starting point for this paper was the conviction that psychological models of the attitudinal antecedents union commitment (which closely predict activism) provided only a partial explanation of why workers become active in trade unions (Gall and Fiorito, 2012), and that it is necessary to look for the role of economic, social and institutional factors too, because these factors would be more likely than psychological factors to determine the union behaviour of what Nicholson and colleagues (1981) called instrumental activists who become active in response to dissatisfaction with ‘bread and butter’ issues related to economic concerns. Drawing on a well-established body of theory, we hypothesised that macro-economic conditions might be associated with activism, because they change the incentives for workers with regard to union activism. As the empirical literature on this is somewhat contradictory four hypotheses about the effects of macro-economic variables were developed. We found support for two of them; real wage growth is negatively associated with activism while unemployment is positively associated with activism. The magnitude of these effects is quantitatively and statistically significant in that a squeeze on real wages comparable to that experienced in Britain since 2008 or an increase in unemployment to the level experienced in Britain in the recessions of the early 1980s and early 1990s would increase our statistically produced benchmark worker’s probability of activism by moderate but quantitatively significant amounts (albeit from a low base). This clearly demonstrates that macro-economic conditions do influence the union behaviour of workers, but not to anything approaching the extent claimed by some of the time series analyses of the business cycle-union membership and business cycle-strikes relationships (e.g. Disney, 1990). Further analyses revealed that the relationships were most pronounced within the public sector.

One of the major criticisms levelled against economic theories of union behaviour, is that it is not clear how changes in macro-economic conditions change the behaviour of workers at a micro level (e.g. Fiorito 1982). Therefore, we went on to investigate whether the effects of macro-economic variables were explained by measures of the economic position of the individual worker and proxies for the institutions of industrial relations at the workplace level. If the addition of these variables resulted in the relationship between economic variables becoming smaller and statistically insignificant, this would suggest the channel through which macro conditions affect micro behaviour.

Our results suggest that measures of the economic position of the individual employee do have a role in determining activism behaviour, with employees more likely to become active if their pay has grown more slowly than a standard human capital equation would predict, and if they are dissatisfied with pay and job security. Similarly, workers who feel the threat of job loss most keenly, because they have previously been made redundant were less likely to be activists. However, the addition of these variables did not account for the relationship between activism and macro-economic conditions.

The addition of controls for job, workplace and individual characteristics, many of which act as proxy measures for the institutions of industrial relations at a workplace, sector or industry level largely explained the effects of the macro-economic variables. This suggests that macro-economic factors influence the probability of being a union activist via the behaviour of particular groups of workers, working in the more unionised sectors of the economy with traditions of addressing economic grievances through collective action, particularly those in the public sector. This result accords with what mobilisation theory (Kelly, 1998) would lead us to expect; for a grievance to become a collective grievance addressed through union activism it is necessary for workers to have a collective identity and leadership and organisation which frames grievances in collective terms and this would only be present in well unionised sectors. Grievances over bread and butter issues only result in union activism if workers have the opportunity or ability to become active (Stepina and Fiorito 1986: 251). Given the relatively small size of the unionised sector, this helps to explain why the associations between macro-economic variables and union activism are not larger.

Overall then, this study represents a development on the approach to understanding union activism found in the psychological literature on union commitment. Longitudinal data have allowed us to control for time invariant individual psychological factors found to be important in this literature, while allowing us to identify economic and institutional effects on activism not previously identified by psychological studies. At the same time, our approach is also an advance on the methods traditionally used by economists to investigate the relationship between economic factors and the union behaviour of workers, because the use of longitudinal micro-data allow us to identify the mechanisms through which macro-economic variables influence individual behaviour, while also reducing the likelihood that results will be overstated due to omitted variable bias. Essentially then, our results suggest that there is merit to the theory that macro-economic factors (and economic factors not necessarily closely related to macro-level changes) influence the union behaviour of workers, however, they also suggest that much of the research testing this theory using time series analysis of aggregate data dramatically overstated the size of the effects.

Based on our analysis, we would predict that union activism will have risen since the economic crisis of 2008, because British workers have been subjected to a prolonged period of falling real wages at the same time as unemployment has risen. Further, we would expect this activism to have been concentrated in the more heavily unionised parts of the economy, for example the public sector. Although we cannot formally test this prediction, because, regrettably, the BHPS stopped asking the question on union activism on which our analysis was based in 2007, evidence from the Workplace Employment Relations Study does indeed point to an increase in union activism, particularly in the highly unionised public sector (van Wanrooy et al., 2013: 151).

Finally, these results suggest that union activism is the result of the interplay between structure (economic conditions) and the agency of unions themselves; where union have succeeded in building and maintaining organisation, workers become active in their unions in response to dissatisfaction with bread and butter issues related to the business cycle. This finding is in contrast to the picture that emerged from much of the previous literature on unions and the business cycle, which appeared to suggest that the union behaviour of workers was a mechanistic reaction to changing economic conditions. On the one hand this demonstration of the scope for union agency in promoting activism should be heartening for unions. On the other, the challenges to building and sustaining the conditions under which activism becomes a viable option for workers given the wider institutional-political-economic structures under which union in advanced industrial countries have to operate in remains a formidable challenge, which unions all over the world have been struggling to meet for the last thirty years.

**Endnotes**

1. We also tested whether specific measures of personal economic position and workplace characteristics which proxy for industrial relations institutions formally mediated the relationships between macro-economic variables and activism using the procedure suggested by (Zhao et al., 2010:204). See note two below for a discussion of results.
2. Given the large number of potential mediator variables, it is not feasible to fully report the results of formal tests of mediation for these variables. Briefly, results suggested that many of the proxy measures of industrial relations institutions partially mediated the relationship between economic variables and activism. The joint effect of these variables was then to fully mediate the relationship between macro-economic variables and activism.

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**Table 1. Inflation, unemployment and real wage growth in Great Britain 1991 – 2007.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Unemployment Rate** | **RPI Inflation** | **Real Wage Growth** | **GDP Growth** |
| **1991** | 8.9 | 5.9 | 1.9 | -1.4 |
| **1992** | 9.9 | 3.7 | 2.2 | 0.1 |
| **1993** | 10.4 | 1.6 | 1.3 | 2.2 |
| **1994** | 9.5 | 2.4 | 1.3 | 4.3 |
| **1995** | 8.6 | 3.5 | -0.4 | 3.1 |
| **1996** | 8.1 | 2.4 | 1.2 | 2.9 |
| **1997** | 6.9 | 3.1 | 1.2 | 6.2 |
| **1998** | 6.2 | 3.4 | 1.7 | 3.8 |
| **1999** | 6 | 1.5 | 3.3 | 3.7 |
| **2000** | 5.4 | 3 | 1.5 | 4.5 |
| **2001** | 5.1 | 1.8 | 2.6 | 3.2 |
| **2002** | 0.2 | 1.7 | 1.8 | 2.7 |
| **2003** | 5 | 2.9 | 0.5 | 3.5 |
| **2004** | 4.8 | 3 | 1.5 | 3 |
| **2005** | 4.9 | 2.8 | 1.2 | 2.1 |
| **2006** | 5.4 | 3.2 | 0.9 | 2.6 |
| **2007** | 5.3 | 4.3 | -0.3 | 3.5 |

Sources:

Real wage growth- The percentage change in the average annual wages, including bonuses, of all employees net of inflation. Data were provided to the authors by the Office for National Statistics (ONS).

RPI Inflation- Retail Price Index- Provides the measure of inflation based upon the change in price of a basket of goods and services including mortgage interest payments, house depreciation and council taxes (ONS n.d.a)

Unemployment Rate: The percentage of economically active individuals aged 16 and over who are not in employment but are looking for, and able to, work (ONS n.d.b)

GDP Growth: Annual percentage growth rate of Gross Domestic Product - the market value of all domestic goods and services produced within a single country, taken at the value of the local currency. (Worldbank n.d)

**Table 2. Mean values of independent variables**

|  |  |  |
| --- | --- | --- |
|  | 1. Mean   (standard deviation) | 1. Mean   (standard deviation) |
| **National Level Statistics**  National Unemployment Rate  Inflation Rate  Real Annual Wage Growth  **Voting Preference**  Labour Supporter  **Job characteristics**  Actual and Predicted Wage Growth Gap  Non-union job  Unionized job  Part-time job  Full-time job  **Industry**  Mining, quarrying and extraction  Gas, electricity and water supply  Manufacturing  Construction  Retail, wholesale and distribution  Hotels and restaurants  Transport and communications  Financial Services  Other business services  Public Administration  Health and social services  Education  Other community services  Agriculture, Forestry and Fishing  **Occupation**  Managerial occupations  Professional occupations  Associate professional and technical occupations  Clerical occupations  Skilled manual occupations  Personal and protective services  Sales occupations  Semi-skilled manual  Unskilled  Permanent job  Non-permanent job  Workplace employs 25 or less employees  Workplace employs more than 25 employees  Public sector  Private sector  Voluntary sector  Previously Made Redundant or Dismissed  Never Made Redundant or Dismissed  **Individual characteristics**  Men  Women  Non-European ethnic minorities  European ethnic origin  **Age**  Less than 25  25 – 34  35 – 49  50+  **Highest educational qualification**  None  CSE or equivalent  GCE O level or equivalent  GCE A level or equivalent  Higher education qualification  Other vocational qualification  **Residency**  Midlands and north of England, Scotland and Wales  London, the south east and southwest of England and East Anglia  **Financial Situation**  Living Comfortably  Doing Alright  Just About Getting By  Struggling  **Life Satisfaction**  Satisfaction With Pay  Satisfaction with Job Security  Satisfaction with Work Itself  Satisfaction with Hours Worked | 6.127  (1.506)  1.942  (0.578)  3.733  (0.970)  0.406  0.018  (0.173)  0.512  0.488  0.204  0.796  0.017  0.008  0.165  0.042  0.152  0.052  0.059  0.048  0.098  0.085  0.102  0.096  0.070  0.009  0.145  0.099  0.116  0.176  0.096  0.121  0.084  0.083  0.081  0.953  0.047  0.488  0.512  0.291  0.666  0.043  0.081  0.919  0.494  0.506  0.026  0.974  0.144  0.235  0.399  0.221  0.010  0.036  0.188  0.136  0.507  0.033  0.354  0.646  0.317  0.419  0.213  0.051  4.894  5.391  5.464  5.230 | 5.998  (1.427)  1.901  (0.562)  3.728  (0.974)  0.398  0.019  (0.171)  0.506  0.494  0.206  0.794  0.020  0.009  0.163  0.043  0.152  0.055  0.056  0.043  0.089  0.086  0.102  0.097  0.075  0.010  0.136  0.099  0.115  0.175  0.097  0.124  0.086  0.086  0.083  0.954  0.046  0.325  0.675  0.286  0.671  0.043  0.130  0.919  0.511  0.489  0.023  0.967  0.133  0.210  0.410  0.252  0.102  0.037  0.188  0.127  0.514  0.033  0.446  0.554  0.322  0.419  0.210  0.049  4.911  5.408  5.433  5.174 |
| N. observations | 29,712 | 25,754 |
| N. unique individuals | 13,779 | 9,356 |

Sample – pooled unbalanced panel of employees from waves 1,2,3,4,5,7,9,11,13,15 and 17 of the British Household Panel Survey, column (1) weighted by cross-sectional weights, column (2) un-weighted.

Figure 1. Percentage of employees who are trade union activists 1991 – 2007



Figure 2. Union membership density and activism as a percentage of members who are activists, 1991 – 2007

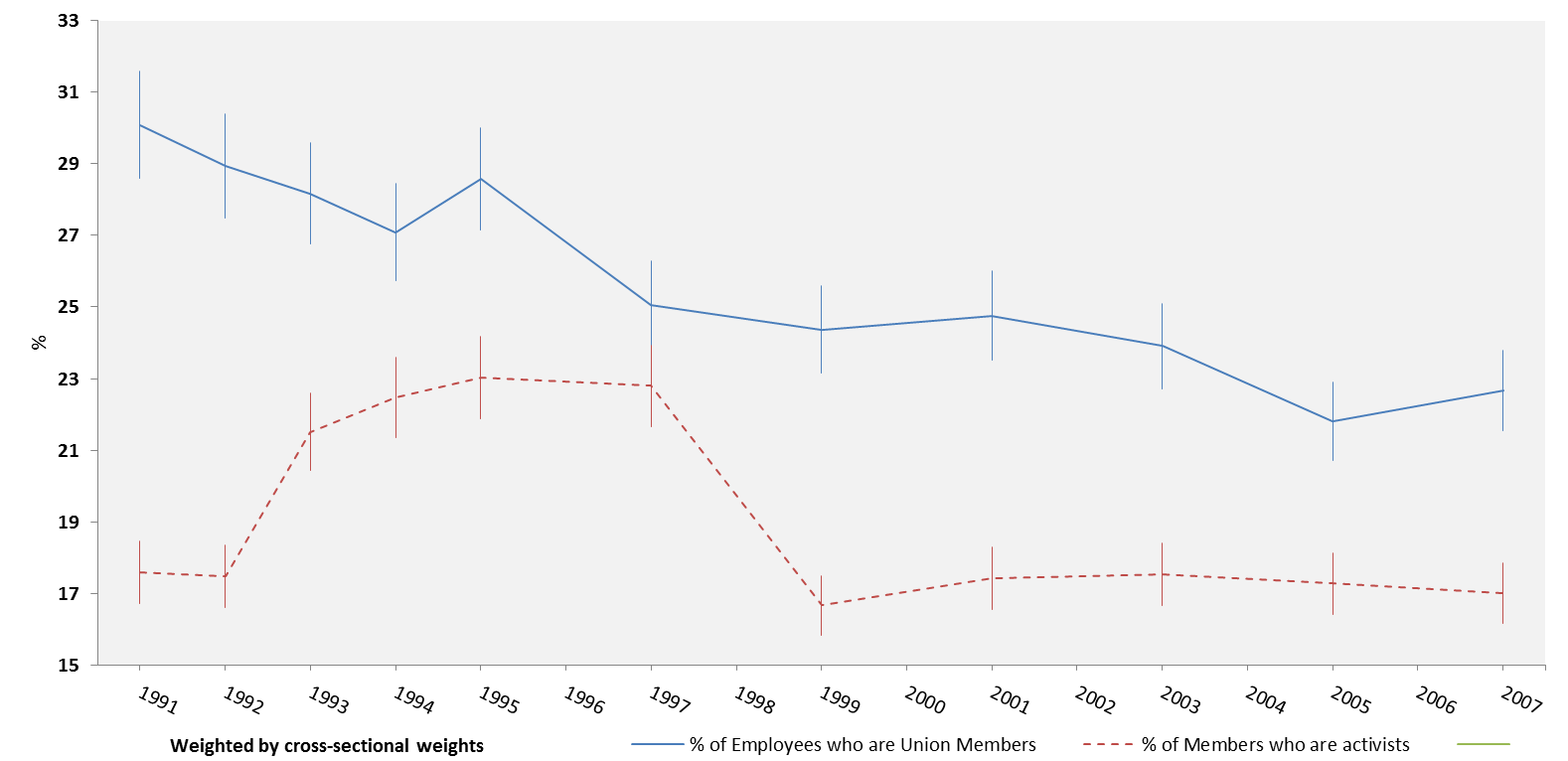
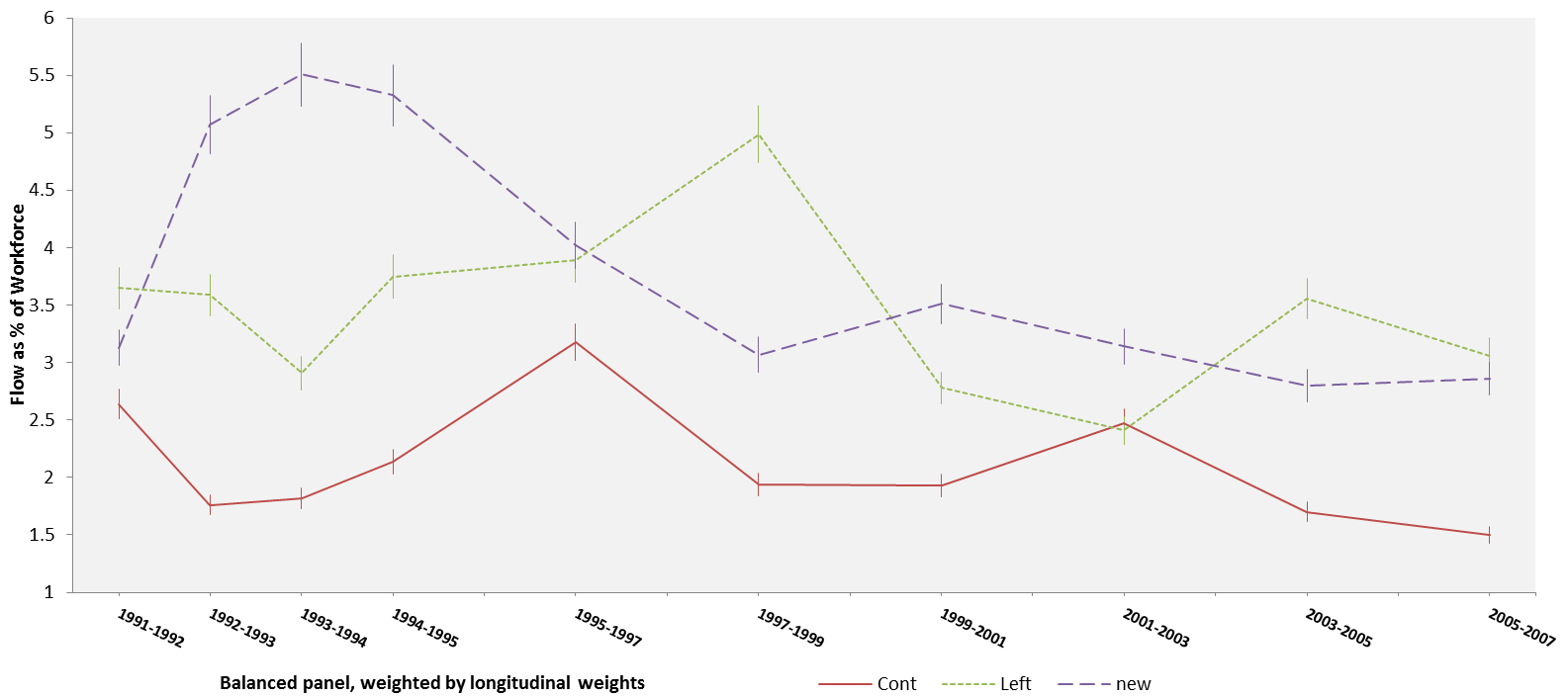


Figure 3. Flows into and out of trade union activism

**Table three. The determinants of union activism: marginal effects from pooled and random effects logit analyses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (1) Random Effects Logit | (2) Random Effects Logit | (3) Random Effects Logit | (4) Pooled Logit | (5) Pooled Logit | (6) Pooled Logit |
| Difference between actual and expected pay |  | 0.0056\*\*\* | 0.0068\*\*\* |  | 0.0230\*\*\* | 0.0212\*\*\* |
|  |  | (0.0016) | (0.0015) |  | (0.0064) | (0.0042) |
| Actual and Predicted Wage Growth Gap |  | -0.0050\*\*\* | -0.0036\* |  | -0.0239\*\*\* | -0.0116\*\*\* |
|  |  | (0.0017) | (0.0014) |  | (0.0064) | (0.0041) |
| Previously Made Redundant or Dismissed |  | -0.0032\*\*\* | -0.0019\* |  | -0.0185\*\*\* | -0.0058\*\* |
|  |  | (0.0008) | (0.0007) |  | (0.0035) | (0.0025) |
| National Unemployment Rate | 0.0005\*\*\* | 0.0004\*\* | 0.0018 | 0.0024\*\* | 0.0013 | 0.0034 |
|  | (0.0002) | (0.0002) | (0.0024) | (0.0010) | (0.0009) | (0.0056) |
| Inflation Rate | -0.0004 | -0.0002 | -0.0041 | -0.0017 | -0.0003 | -0.0105\*\* |
|  | (0.0005) | (0.0005) | (0.0026) | (0.0025) | (0.0022) | (0.0045) |
| Annual Wage Growth- National Level | -0.0008\*\*\* | -0.0007\*\*\* | -0.0010 | -0.0042\*\*\* | -0.0034\*\*\* | -0.0025 |
|  | (0.0003) | (0.0002) | (0.0009) | (0.0011) | (0.0010) | (0.0019) |
| **Voting Preference** |  |  |  |  |  |  |
| Labour Supporter |  | 0.0089\*\*\* | 0.0002 |  | 0.0407\*\*\* | 0.0008 |
|  |  | (0.0016) | (0.0004) |  | (0.0052) | (0.0015) |
| **Job Satisfaction** |  |  |  |  |  |  |
| Satisfaction With Pay |  | -0.0005\*\* | -0.0017\*\* |  | -0.0026\*\*\* | -0.0015\*\*\* |
|  |  | (0.0002) | (0.0005) |  | (0.0010) | (0.0004) |
| Satisfaction With Job Security |  | -0.0002 | -0.0001\* |  | -0.0018\*\* | -0.0005 |
|  |  | (0.0002) | (0.0001) |  | (0.0008) | (0.0004) |
| Satisfaction With Work Itself |  | -0.0005\*\* | -0.0003 |  | -0.0016 | -0.0005 |
|  |  | (0.0002) | (0.0002) |  | (0.0010) | (0.0005) |
| Satisfaction with Hours Worked |  | -0.0001 | 0.0001 |  | -0.0012 | 0.0001 |
|  |  | (0.0002) | (0.0002) |  |  | (0.0005) |
| **Financial Situation (Ref Living Comfortably)** |  |  |  |  |  |  |
| Doing Alright |  | -0.0010\* | -0.0001 |  | -0.0023 | 0.0012 |
|  |  | (0.0006) | (0.0005) |  | (0.0029) | (0.0014) |
| Just About Getting By |  | -0.0015\*\* | -0.0004 |  | -0.0059\* | 0.0003 |
|  |  | (0.0007) | (0.0006) |  | (0.0034) | (0.0017) |
| Struggling |  | -0.0023\*\* | -0.0005 |  | -0.0101\*\* | -0.0006 |
|  |  | (0.0009) | (0.0009) |  | (0.0050) | (0.0029) |
| **Control Variables** |  |  |  |  |  |  |
| Part Time Job |  |  | -0.0030\*\*\* |  |  | -0.0108\*\*\* |
|  |  |  | (0.0006) |  |  | (0.0022) |
| Active workplace union |  |  | 0.0210\*\*\* |  |  | 0.0479\*\*\* |
|  |  |  | (0.0020) |  |  | (0.0024) |
| Workplace employs 25 or less employees |  |  | -0.0010 |  |  | -0.0030\* |
|  |  |  | (0.0005) |  |  | (0.0016) |
| Non-permanent job |  |  | -0.0031\*\*\* |  |  | -0.0134\*\*\* |
|  |  |  | (0.0006) |  |  | (0.0036) |
| **Sector (ref. Private)** |  |  |  |  |  |  |
| Public sector |  |  | 0.0044\*\*\* |  |  | 0.0093\*\*\* |
|  |  |  | (0.0012) |  |  | (0.0026) |
| Voluntary sector |  |  | 0.0044\* |  |  | 0.0110\*\*\* |
|  |  |  | (0.0021) |  |  | (0.0037) |
| Women |  |  | -0.0032\*\*\* |  |  | -0.0081\*\* |
|  |  |  | (0.0007) |  |  | (0.0017) |
| Ethnic Minorities |  |  | 0.0039 |  |  | 0.0097\*\*\* |
|  |  |  | (0.0023) |  |  | (0.0037) |
| **Age (ref. <25)** |  |  |  |  |  |  |
| 25 – 34 |  |  | 0.0005 |  |  | 0.0038 |
|  |  |  | (0.0009) |  |  | (0.0026) |
| 35 – 49 |  |  | 0.0035\*\*\* |  |  | 0.0106\*\*\* |
|  |  |  | (0.0010) |  |  | (0.0025) |
| 50+ |  |  | 0.0067\*\*\* |  |  | 0.0160\*\*\* |
|  |  |  | (0.0017) |  |  | (0.0029) |
| **Residency** |  |  |  |  |  |  |
| Midlands and north of England, Scotland and Wales |  |  | 0.0031\*\*\* |  |  | 0.0086\*\*\* |
|  |  | (0.0006) |  |  | (0.0016) |
| **Highest educational qualification (ref. none)** |  |  |  |  |  |  |
| CSE or equivalent |  |  | 0.0015 |  |  | 0.0037 |
|  |  |  | (0.0019) |  |  | (0.0043) |
| GCE O level or equivalent |  |  | 0.0002 |  |  | -0.0006 |
|  |  |  | (0.0010) |  |  | (0.0028) |
| GCE A level or equivalent |  |  | -0.0003 |  |  | -0.0033 |
|  |  |  | (0.0010) |  |  | (0.0029) |
| Higher education qualification |  |  | 0.0020\* |  |  | 0.0043\* |
|  |  |  | (0.0009) |  |  | (0.0026) |
| Other vocational qualification |  |  | 0.0001 |  |  | -0.0014 |
|  |  |  | (0.0017) |  |  | (0.0047) |
| **Occupation (Ref- Managerial)** |  |  |  |  |  |  |
| Professional occupations |  |  | 0.0030\* |  |  | 0.0069\*\* |
|  |  |  | (0.0013) |  |  | (0.0027) |
| Associate professional & technical occupations |  |  | 0.0026\* |  |  | 0.0069\*\*\* |
|  |  |  | (0.0012) |  |  | (0.0026) |
| Clerical occupations |  |  | 0.0017 |  |  | 0.0043 |
|  |  |  | (0.0011) |  |  | (0.0027) |
| Skilled manual occupations |  |  | 0.0058\*\* |  |  | 0.0117\*\*\* |
|  |  |  | (0.0021) |  |  | (0.0031) |
| Personal and protective services |  |  | 0.0012 |  |  | 0.0024 |
|  |  |  | (0.0011) |  |  | (0.0028) |
| Sales occupations |  |  | 0.0053\* |  |  | 0.0114\*\* |
|  |  |  | (0.0027) |  |  | (0.0047) |
| Semi-skilled manual |  |  | 0.0083\*\*\* |  |  | 0.0165\*\*\* |
|  |  |  | (0.0025) |  |  | (0.0031) |
| Unskilled |  |  | 0.0027 |  |  | 0.0078\*\* |
|  |  |  | (0.0016) |  |  | (0.0030) |
| **Industry (ref. Retail)** |  |  |  |  |  |  |
| Mining, quarrying and extraction |  |  | 0.0026 |  |  | 0.0092\* |
|  |  |  | (0.0026) |  |  | (0.0051) |
| Manufacturing |  |  | 0.0019 |  |  | 0.0059 |
|  |  |  | (0.0015) |  |  | (0.0037) |
| Gas, electricity and water supply |  |  | 0.0077 |  |  | 0.0223\*\*\* |
|  |  |  | (0.0048) |  |  | (0.0060) |
| Construction |  |  | 0.0003 |  |  | 0.0012 |
|  |  |  | (0.0018) |  |  | (0.0053) |
| Agriculture, Forestry And Fishing |  |  | 0.0015 |  |  | 0.0069 |
|  |  |  | (0.0040) |  |  | (0.0093) |
| Hotels and restaurants |  |  | 0.0040 |  |  | 0.0087 |
|  |  |  | (0.0034) |  |  | (0.0059) |
| Transport and communications |  |  | 0.0071\* |  |  | 0.0143\*\*\* |
|  |  |  | (0.0029) |  |  | (0.0040) |
| Financial Services |  |  | 0.0028 |  |  | 0.0088\* |
|  |  |  | (0.0022) |  |  | (0.0048) |
| Other business services |  |  | 0.0037 |  |  | 0.0091\*\* |
|  |  |  | (0.0023) |  |  | (0.0045) |
| Public Administration |  |  | 0.0030 |  |  | 0.0104\*\* |
|  |  |  | (0.0020) |  |  | (0.0044) |
| Education |  |  | 0.0037 |  |  | 0.0102\*\* |
|  |  |  | (0.0022) |  |  | (0.0045) |
| Health and social services |  |  | 0.0049\* |  |  | 0.0117\*\*\* |
|  |  |  | (0.0025) |  |  | (0.0044) |
| Other community services |  |  | 0.0051 |  |  | 0.0130\*\*\* |
|  |  |  | (0.0027) |  |  | (0.0044) |
| **Predict Probability for Benchmark Worker** | 0.0696 | 0.0125 | 0.0127 | 0.0433 | 0.0333 | 0.0494 |
| Random Effect: Wald Chi2 test | 72.25 | 98.96 | 817.66 |  |  |  |
| Random Effect: Probability > Chi2 | 0.000 | 0.000 | 0.000 |  |  |  |
| SVY: F() |  |  |  | 16.28 | 10.00 | 12.3 |
| N Observations  N Unique Individuals | 25,754  9,356 | 25,754  9,356 | 25,754  9,356 | 25,754  9,356 | 25,754  9,356 | 25,754  9,356 |

Standard errors in parentheses. \*\*\* = p<0.001,\*\* = p<0.01, \*=p<0.05

Additional controls, not reported for reasons of space: survey wave

Technical Appendix. Table A1. The characteristics of the ‘benchmark’ statistical worker against whom marginal effects are evaluated.

|  |  |  |
| --- | --- | --- |
| **Variable Name** | **Baseline Value Used for Marginal Effect** | |
| **random effects logit model** | **Pooled cross-sectional logit model** |
| Difference between actual and expected pay | 1% | 1% |
| Actual and Predicted Wage Growth Gap | 1% | 1% |
| Previously Made Redundant or Dismissed | Not Previously | Not Previously |
| National Unemployment Rate | 4% | 4% |
| Inflation Rate | 2% | 2% |
| Annual Wage Growth- National Level | 2% | 2% |
| Voting Preference  Satisfaction With Pay | Not Labour  4.898086 | Not Labour  4.9100778 |
| Satisfaction With Job Security | 5.422987 | 5.405982 |
| Satisfaction With Work Itself | 5.438421 | 5.427169 |
| Satisfaction with Hours Worked | 5.17074 | 5.176871 |
| Financial Situation | Living Comfortably | Living Comfortably |
| Job Type (PT/FT) | Full Time | Full Time |
| Unionized Workplace? | Yes | Yes |
| Workplace Size | More than 25 Employees | More than 25 Employees |
| Contract Type | Permanent | Permanent |
| Sector | Private | Private |
| Gender | Male | Male |
| Ethnicity | White | White |
| Age | Under 25 | Under 25 |
| Residency | South of England | South of England |
| Education | None | None |
| Occupation | Managerial | Managerial |
| Industry | Retail | Retail |
|  |  |  |