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Do Job Security Guarantees Work?

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Abstract
We investigate the effect of employer job security guarantees on employee perceptions of job security. Using linked employer-employee data from the 1998 British Workplace Employee Relations Survey, we find job security guarantees reduce employee perceptions of job insecurity. This finding is robust to endogenous selection of job security guarantees by employers engaging in organisational change and workforce reductions. Furthermore, there is no evidence that increased job security through job guarantees results in greater work intensification, stress, or lower job satisfaction.

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Keywords: Job insecurity, job guarantees, linked employer-employee data

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Economists have long argued that worker perceptions of job insecurity are important since they determine a range of economic outcomes, including wages (Aarnoson and Sullivan, 1998), consumption - most notably with respect to home ownership (Doling and Ford, 1996), and savings (Manski, 2004). Other social scientists stress the effect of job insecurity on employee welfare indicators such as employees' psychological well-being and effects on family relationships (Burchell, 1994; 1999). Job security is also highly valued by employees. For example, in 1998, at a time when unemployment was relatively low in the United States, the General Social Survey indicates that job security was the job attribute most likely to be viewed as 'very important'. Fifty-seven percent rated it 'very important'. This compares, for example, with 51 percent for 'interesting work', 37 percent for 'chances of advancement', 31 percent for 'useful to society' and 23 percent for 'high income in a job' (http//:www.icpsr.umich.edu:8080/GSS/homepage.htm). There has been considerable debate as to whether there is a secular upward trend in job insecurity in Britain. Results depend heavily on the type of insecurity measure used and the group of workers being studied (Green et al., 2000). The growing consensus is that perceptions of job insecurity rose during the 1970s and 1980s for most types of worker (Burchell et al., 1997), and perhaps into the mid-1990s (Bryson and McKay, 1997) but have levelled off or even declined since then, reflecting an improvement in economic conditions and attendant optimism regarding re-employment probabilities (Green, 2003; Burchell et al., 1999).[1] Nevertheless, worker perceptions of job insecurity remain high by international standards. Using internationally comparable data for 1997, Green (2003) shows almost 30 per cent of British workers regarded their jobs to be insecure – twice as high as the rate in the United States and considerably higher than in other countries.[2] This perception corroborates employer perceptions that employment security is low in the UK relative to other countries, something that seems to reflect differences in legal employment protections, union density and the prevalence of atypical employment (Morgan, Genre and Wilson, 2001).

The literature on the correlates and determinants of perceived job insecurity has focused on individuals' characteristics, business cycle effects and job attributes (eg. Green et al., 2000, 2003; Bryson and McKay, 1997), notably job tenure and non-standard contracts (eg. Gallie et al., 1998). Data limitations mean less is known about the impact of employer practices on employee job insecurity. Yet employers may gain substantially from employee

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[1] A similar pattern has been observed for the United States (Green, 2003).
[2] These data are based on agree/disagree scales in response to the statement 'My job is secure' and are taken from the International Social Survey Programme Data.

job security, since it may increase labour productivity through encouragement of worker investment in firm-specific human capital and increased worker motivation through affiliation to the organisation. This article exploits rich linked employer-employee data to establish the effectiveness of employer policies that are explicitly aimed at reducing employee perceptions of job insecurity, namely job security guarantees. To our knowledge, no one has investigated whether these policies reduce employee perceptions of job insecurity. Such an investigation is merited, not only because job security is highly valued by employees, but because these guarantees are widespread in Britain and are used by employers to elicit employee trust and cooperation in times of change. The second section considers the incidence of job security guarantees in Britain, the circumstances in which employers introduce them, and hypothetical links between job security policies and employee perceptions of job security. The third section introduces the data. The fourth section presents descriptive analyses. Section five presents analysis of the causal impact of job security guarantees on perceptions of job insecurity and section six concludes.

Reasons for introducing job security guarantees and their potential impact on employee perceptions of job insecurity

In parts of continental Europe, job security is often mandated under statute. In Britain, as in the United States, job security guarantees usually emanate from enterprise or establishment-level bargaining between employers and employees or their representatives. This paper considers the role of job security guarantees in the absence of a statutory mandate. Under these conditions, empirical evidence for Britain suggests there are two common scenarios in which employers are likely to derive benefit from a policy offering job security (IRS, 1997). The first is when employers are embarking on a programme of organisational change. These programmes often signal employer efforts to elicit increased employee commitment and involvement through a shift from traditional working practices towards team working and multiskilling, with a view to increasing labour productivity (Geary, 2003: 354-355). Such changes can create job insecurity since workers are being asked to share their firm-specific human capital with others, a process of knowledge-sharing which makes each worker more dispensible. In addition, multiskilling and delayering, by increasing labour productivity, may reduce the number of jobs required to produce and deliver the product or service. This is why

the social partnership literature in the UK (which is akin to the mutual gains literature in the US) makes a link between job security guarantees and concessions by employees in the flexible deployment of labour (Kelly, 2004). The logic behind this package is a trade-off between management and labour whereby the firm can obtain a competitive advantage through flexible labour practices, in return for which employees obtain some form of guarantee that their increased productivity will not lead to enforced job cuts.[3] If successful, this may enhance perceptions of job security, but it is not clear what the implications might be for other aspects of the job, such as work intensity, pay satisfaction and intrinsic job satisfaction.[4]

The second scenario in which employers may benefit from policies offering job security is prior to downsizing. Irrespective of whether management is looking to introduce new employment practices, there will be times when workplaces seek workforce reductions, for example, to improve competitiveness, in response to a downturn in product demand, or as part of the internal structural reorganisation within a larger organisation. In such circumstances, the employer will want to lose some posts but retain others. Job security policies often guarantee no compulsory redundancies. Where such an offer is made to the whole workforce, the employer will seek workforce reductions through natural wastage, redeployment within the organisation, or a voluntary redundancy programme. The employer may stop short of guaranteeing no compulsory redundancies but make a commitment to exploring alternative methods of achieving workforce reductions before compulsory redundancies are considered. In other circumstances, compulsory redundancy may be unavoidable, but the employer will nevertheless offer a job security guarantee to those she wishes to retain (IRS, 1997).

Despite the potential value of job security policies to employers and employees, no-one has yet established whether they work in terms of reducing employees' perceptions of job insecurity. Descriptive evidence based on the survey used in this paper indicates that in Britain in the late 1990s "workforce reductions were equally common among workplaces with and without a job security policy" (Cully et al., 1999: 80). In fact, extending the analysis to all workplaces in the survey, those with a job security guarantee were more likely than those without to have experienced workforce reductions in the preceeding 12 months: 35

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[3] Because of the link between security guarantees and job flexibility, some employers prefer the phrase "employment security" to "job security" (IRS, 1997).
[4] Forth and Millward (2004), using the same data set as that used in this paper, identify a wage premium attached to workplaces using high-involvement management practices, but only in the presence of job security

percent had reduced their workforce size, compared with 26 percent among those without a job security guarantee.[5] This survey evidence is consistent with case study evidence that job security guarantees do not reduce the likelihood of workforce reductions. For example, of the 22 social partnership case studies identified by Kelly (2004: 274) in the period 1991-2000, 11 had employment security clauses. Of these, 8 had suffered job losses since partnership began, compared with only 4 of the 11 who did not have employment security clauses. Kelly (2004: 281) argues his finding "suggests that the main function of "job security" agreements is to help companies jointly manage labor force reductions rather than avoid them". This leaves open the question of how employees *feel* about their job security when workforce reductions are 'being managed', as opposed to circumstances when they are not 'being managed'. It is possible that perceptions of job insecurity may be lower where there is a job security guarantee because, where such a policy is in place, employers are much less likely to obtain workforce reductions through compulsory redundancies (Cully et al., 1999: 80). Our analysis for the whole sample confirms that compulsory redundancies are less likely where a job security guarantee is present: 31 percent of those making workforce reductions in the previous 12 months in the absence of a job security guarantee had used compulsory redundancies, compared with 12 percent among those with a job security guarantee. These findings suggest that, where workforce reductions are sought, job security guarantees may reduce the probability of a forced exit from the organisation. It is this prospect of avoiding compulsory redundancies, rather than workforce reductions *per se*, that may make job security guarantees attractive to employees.

Even if job security guarantees seem to be associated with increased job security, the effect may not be causal. For instance, workers may sort themselves into workplaces according to the employer practices in place. If risk-averse workers value job security guarantees more than other workers they may be more likely to be employed in workplaces offering security guarantees. If this sorting occurs it may suggest job security guarantees are successful when, in fact, the effect is driven by sorting across workers. A positive association between job security guarantees and employee job security may also occur through workplace sorting. For instance, this might occur because employers favouring long-term relationships with their employees to reap the rewards of training investments, are more

guarantees. They suggest that job security guarantees help ensure high-involvement management elicits productivity improvements from which workers can benefit.
[5] Cully et al. (1999) confine their analysis to workplaces with 25 or more employees, whereas the figures presented here relate to all workplaces in the sample, including those with between 10 and 24 employees.

inclined to grant employees' request for a job security guarantee than employers who are less concerned about fostering a long-term relationship with employees. In section four we discuss how we tackle this problem of endogeneity.

There are also a number of reasons why one might anticipate a negative association between perceived job security and job security guarantees. First, there may be reverse causation: employers may introduce job security guarantees where concerns about job security are high. Of course, in this case, it is the underlying causes of this insecurity, rather than the policy *per se*, which generates the insecurity. Second, we might expect the practice to affect employees differently according to whether they are covered. If the security of one group of workers is achieved at the expense of other employees not covered by the guarantee, the latter may feel particularly insecure since they know they have been singled out as occupying jobs likely to go in any workforce reductions. Third, it may be that the policy does not offer the degree of job security that employees are looking for, creating an 'expectation gap' which results in employees expressing greater job insecurity than they might otherwise do. This could be particularly apparent where the job security guarantee is the result of collective bargaining, as is often the case. This is because, as part of the bargaining process, unions may encourage 'voice-induced complaining' to strengthen their bargaining hand with the employer (Freeman and Medoff, 1984).[6]

Given the circumstances in which employers introduce job security guarantees, it seems plausible that the employer may expect some kind of quid pro quo. This may take the form of employer expectations of greater latitude in the deployment of labour (Kelly, 2004; IRS, 1997). In such circumstances, the additional pressure on remaining workers may manifest itself in lower job satisfaction, greater work stress, or perceptions of work intensification. Alternatively, the employer might view granting a job security guarantee as part of a gift exchange, with the employer getting the good will of employees in return (Akerlof, 1982). We therefore explore these possibilities in our data.

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[6] Using the data we use in this paper, Guest and Conway (2003) find that unionisation is associated with greater perceptions of job insecurity controlling for other factors.

Data

The data are the linked employer-employee British Workplace Employee Relations Survey 1998 (WERS98). With appropriate weighting they are nationally representative of British employees working in workplaces with 10 ore more employees. The surveys had high response rates (80 percent in the workplace survey and 64 percent in the employee survey), giving us some confidence that the data are representative of the populations from which they were drawn.[7] The linkage between employees and employers allows us to estimate the effect of employer characteristics, including job security guarantees, on employees in those workplaces, controlling also for employee characteristics.

Job security guarantees: The workplace survey asks HR managers: 'Is there a policy of guaranteed job security or no-compulsory redundancies for any …[groups of workers]..at this workplace?' Eleven percent of workplaces have such a policy: in 7.9 percent of cases the policy covers managerial and non-managerial employees; in 2.7 percent of cases it covers non-managerial employees only; and in only 0.4 percent of cases is it confined to managerial employees.

The measure of job insecurity. Economists conceive of job insecurity in terms of the risk and the cost of job loss (eg. Nickell et al., 2002). Our survey simply asks each employee 'Do you agree or disagree with the following statements about your job…..

"I feel my job is secure in this workplace".

They are able to tick one of five boxes ranging from 'strongly agree' to 'strongly disagree'. We conjecture that workers' responses to this statement are partly a function of their expectations of job loss and their expectations of good outcomes should job search become necessary. However, their responses may also reflect the stability of their employment conditions more generally (Greenhalgh and Rosenblatt, 1984; Burchell et al., 1997) and, as such, might offer a more complete picture of job insecurity. There are drawbacks to this measure of job insecurity. Responses may not be interpersonally comparable and may be only a rough proxy for worker expectations regarding exogenous job loss and the subjective distribution of outcomes should they search for new employment (Manski and Straub, 2000). However, Green (2003) finds workers' perceived risks of job loss and unemployment are predictive of subsequent experience, perhaps indicating that,

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[7] For full information on the survey's design see Cully et al. (1999).

when giving subjective responses, employees are drawing on private information not otherwise observable to the researcher.

Control variables. Multivariate regression analyses control for a range of individual and workplace characteristics to minimize estimation bias arising from omitted variables. All these variables are described with their mean scores in Appendix Table 1.

Descriptive analysis

Table 1 indicates that 19 percent of employees 'disagreed' or 'strongly disagreed' with the statement 'I feel my job is secure in this workplace'.[8] The distribution of responses is virtually identical across those working in a workplace with a job security guarantee and those in workplaces without a security guarantee.

Table 1:
Employee responses to the statement 'I feel my job is secure in this workplace'

	Job security guarantee:		
	Yes	No	All
Strongly agree	12	13	13
Agree	48	47	47
Neither agree nor disagree	20	21	21
Disagree	14	14	14
Strongly disagree	6	5	5
Unweighted base:	*3060*	*15990*	*19050*

Note: Base is all employees working in workplaces with 10+ employees excluding those with missing data. Figures are column percentages based on data that are weighted back to the population of employees working in workplaces with 10+ employees.

Employees' perceptions of job insecurity are a function of their own characteristics, such as age and gender, their job characteristics, and workplace attributes. Thus, to explore the relationship between job security guarantees and job insecurity further we estimate a set

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[8] GSS data for the US in 1998 indicates that 13 percent of employees either 'disagreed' or 'disagreed strongly' with the statement 'My job is secure' (http://www.icpsr.umich.edu:8080/GSS/homepage.htm, variable RSECJOB), confirming Green's (2003) conjecture that perceived job insecurity may be higher in the UK.

of specifications where job insecurity is regressed on personal, job and workplace characteristics, and a job security guarantee dummy. This allows us to identify the independent effect of job security guarantees, net of observable characteristics of employees and their working environment. However, other features of the workplace and employee which are unobervable to us, such as employees' risk preferences, may be correlated with the presence of a job security guarantee and affect perceived job security. Consequently, owing to the endogeneity issues discussed earlier, it is important at this stage not to infer any causal interpretation from the estimated coefficients.

We assume that the job insecurity propensity of individual i ($i=1,…,N$) is summarised by a continuous latent variable S_i* which is a linear function of personal, job and workplace attributes represented by the column vector X_i, a dummy variable G_i taking value 1 if the individual is in a workplace with a job security guarantee and 0 otherwise and an error term ε_i distributed as standard normal:

$$S_i* = X_i'\beta + \delta G_i + \varepsilon_i \tag{1}$$

where β is a vector of coefficients associated with personal attributes and δ is the scalar coefficient associated with the guarantee. The set of controls included in X_i refers to personal background, occupational and job characteristics including gross weekly earnings and average weekly hours worked, and workplace controls. $S*_i$ is not observed; rather, in the WERS questionnaire we observe S_i, its discrete realisation which can assume a set of ordered values depending on $S*_i$ crossing the latent cut-off points $\tau_1..\tau_4$. Coefficients in (1) can be estimated using an ordered probit model. We adjust the estimator to account for differential sampling probability across establishments by applying sampling weights and account for the presence of multiple observations within the same establishment using a robust variance estimator.

Results are reported in Table 2. We first include only G_i among regressors and then progressively add personal, job and workplace characteristics. By doing so, we can control how the estimated job security guarantee coefficient varies as the set of controls widens: changes in the guarantee coefficient would signal that the policy is correlated with the observable attributes suggesting that membership is not random and might also be correlated with personal attributes not observed in the data, causing endogeneity.

Table 2:
Regressing job security guarantees on employee perceptions of job insecurity

	(1)	(2)	(3)	(4)
Guarantee	0.026	-0.047	-0.050	-0.129
	(0.54)	(0.98)	(1.06)	(2.78)
Personal characteristics	No	Yes	Yes	Yes
Job characteristics	No	No	Yes	Yes
Workplace characteristics	No	No	No	Yes
Model F-test	1,1465=0.29	15,1451=18.02	39,1427=20.20	65,1401=14.98
Model p-value	0.5923	0.0000	0.0000	0.0000

Notes: (1) Table shows job security guarantee coefficients from models estimating perceptions of job insecurity using ordered probit models. (2) Regressions use survey stratification weights and account for repeated observatioins on the same establishment. (3) A 'yes' indicates that the relevant set of control variables is included in the regression. Personal characteristics: female, age (7 dummies), qualifications (3 dummies), health problems, non-white, has children, , married or living as married, union member. Job characteristics: occupation (3 dummies), gender segregation of job within workplace, family-friendly practices index, able to take day off in emergency, paid overtime, permanent contract, training, hours (continuous), gross weekly pay (12 dummies), job tenure (5 dummies). Workplace: sector (12 dummies), local unemployment rate, region (5 dummies), establishment size, single autonomous workplace, public sector, head office, establishment age, workforce composition (4 dummies), union density (continuous). (4) Asymptotically robust t-ratios in parentheses. (5) The model F-tests show the F statistic together with the numerator and demominator degrees of freedom. The F-statistic tests the hypothesis that all coefficients excluding the constant are zero. (6) Sample is all cases with non-missing data (N=19,050)

As can be seen from the first column, in the absence of control variables, there is no statistically significant difference between perceptions of job insecurity among those in a workplace with a security guarantee and those in workplaces without such a guarantee. In column (2) we include a set of controls for personal characteristics. The independent variables in the model are jointly significant and the controls switch the sign of the coefficient on the job security guarantee dummy so that it becomes negative. However, it remains statistically insignificant.[9]

Estimates in column (3) also control for occupational and job characteristics. Our rich data mean that we are able to include a number of variables in addition to the standard variables available in most data sets. Although these variables are jointly significant $(f(24,1442)=18.83, p>f\ 0.0000)$ their introduction does little to affect the size of the job security guarantee coefficient.

As suggested earlier, differences in job insecurity across workers with and without job security guarantees may simply reflect unobserved heterogeneity at the firm or workplace level if the employers adopting job security guarantees are a non-random subset of all workplaces. Column (4) exploits the employer dimension of WERS and adds a set of controls for workplace characteristics. The workplace-level controls are jointly significant

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[9] The full models are not presented but are available on request from the authors.

(f(26,1440)=8.18, p>f=0.0000). When added to the other controls, their effect is to double the size of the job guarantee coefficient and increase the precision with which it is estimated such that it becomes statistically significant at the 99% level.

These results indicate that job security policies are negatively associated with perceived insecurity, and that this association only emerges after workplace characteristics have been controlled for. This implies that job guarantees are adopted predominantly in workplaces characterised by higher *ex ante* job insecurity – perhaps because the workplace is undergoing organisational change or workforce reductions - hiding the beneficial impact of the policy behind compositional effects. This finding points to the importance of taking workplace heterogeneity into account when evaluating the impact of job security guarantee policies, and it seems that the set of workplace-level controls available in WERS is capable of capturing this heterogeneity. In the next section we explore the heterogeneity issue further by focusing on individual unobserved heterogeneity.

The effect of job security guarantees on perceived job insecurity

The analysis above suggests that, having controlled for a rich set of covariates, employees in workplaces with job security guarantees exhibit lower job insecurity than workers like them in workplaces without job security guarantees. However, for reasons discussed above, it is possible that this negative association is induced by unobserved factors which co-determine the employer's decision to adopt a job security policy and reported job insecurity. In this section we provide a direct test of the job security guarantee exogeneity hypothesis.

To do this, we estimate the effect of the job security guarantee on job insecurity while simultaneously modelling job security guarantee status. In this way we are able to control for the presence of unobserved correlation between the policy and job insecurity, thus eliminating the bias induced by unobserved heterogeneity and delivering the causal impact of the guarantee on job insecurity. We augment equation (1) with a probit equation for the probability of job security guarantee coverage:

$$G^*_i = Z_i'\gamma + W_i'\theta + u_i \tag{2}$$

where G^*_i is a continuous latent propensity underlying the dummy G_i, Z_i is a vector of observables, γ is the vector of coefficients associated with those observables, W_i is a variable that has no effect on perceived job security after the job guarantee has been controlled for, θ is the coefficient for this variable, and u_i is an error term distributed as standard normal. We model the link between u_i and ε_i by allowing them to be distributed as bivariate normal with unrestricted correlation $\rho \equiv \text{corr}(\varepsilon_i, u_i)$. By simultaneously estimating equations (1) and (2) we are able to separately identify the correlation between unobservables – the coefficient ρ – and thus to remove the bias induced by unobserved heterogeneity from the coefficient δ in (1).[10]

The set of attributes in Z_i is identical to those in X_i. The attributes relate to both worker and employer characteristics, in recognition of the fact that whether a worker is employed at a workplace with a job security guarantee is a function of both worker choice between workplaces with and without a job security guarantee, and the employer decision as to whether or not to adopt a job security guarantee. The "instrument" in W_i is a dummy variable identifying workplaces where a high percentage of the sales revenue (in the case of the trading sector) or operating costs (in the case of non-trading establishments) is accounted for by labour costs.[11] The identifying assumption is that, since high labour costs are an indicator of employer reliance on labour as opposed to capital in the production process, employers with higher labour costs are more likely than other employers to want to retain their workers and are thus more likely to adopt job security guarantee policies.[12] Of course, if employees were able to make this linkage in their own minds, high labour costs would also partially determine their own job security perceptions. However, we argue that this is highly unlikely since the proportion of revenue or costs accounted for by labour costs is a structural feature of the workplace that is not easily observable by the employee and, as such, does not enter her informatioin set. Thus our identifying strategy takes advantage of the linked

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[10] See Heckman (1978) for a discussion of systems of probit equations with dummy endogenous variables.

[11] The precise question asked of HR managers is: "About what proportion of this establishment's [sales revenue/operating costs] is accounted for by wages, salaries and other labour costs like pensions and national insurance?" Answers are coded to one of four categories: 'less than 25%', '25% but less than 50%', '50% but less than 75%' and '75% or more'.

[12] A high labour cost ratio may be driven by the employment of high quality of labour, the employment of a large quantity of labour, or a combination of the two. It is conceivable that, where labour cost ratios are high due to the large quantity of labour, and capital can easily substitute for labour, the employer may want to replace labour with capital equipment, thus lowering the propensity to adopt a job security guarantee. In our specification we control for the number of employees in the establishment, such that our labour cost ratio proxies labour quality rather than quantity, which is why we emphasise the positive link between high labour cost ratios and job security guarantees. This hypothesis is borne out by descriptive data, which shows that 20.2% of workplaces with high labour cost ratios had job security guarantees, compared to 8.2% of workplaces with low labour cost ratios. Either way, there is no reason to suspect that labour cost ratios will affect employee perceptions of job insecurity.

employer-employee data. We hypothesise a positive link between high labour costs and job security guarantees and claim that this has no effect on individual job insecurity.

The estimated coefficient on job security guarantees reveals that, after endogenisation of the membership status, the coefficient on the policy more than doubles (rising from -.129 to -.315). This suggests that treating job security guarantees as exogenous underestimates the negative impact of the policy on job insecurity because the policy is correlated with individual and workplace features that are unobserved in the data and are associated with greater perceptions of job insecurity. This finding is consistent with the contention that risk averse individuals select themselves into more secure workplaces, namely those adopting a policy of guaranteed job security. Although the correlation coefficient is not precisely estimated (t=1.17), the impact on the policy adoption coefficient is substantial. Overall, our results indicate that policy adoption is beneficial to perceived job security, and that both workplace and individual unobserved heterogeneity would understate the effect if not taken into account.

Table 3:
The Impact of Job Security Guarantees on Job Insecurity

	Job Insecurity	
	Exogenous	Endogenous
Job security guarantee	-.129	-.315
	(2.76)	(1.81)
Personal characteristics	Yes	
Job characteristics	Yes	
Workplace characteristics	Yes	
Correlation of unobservables between insecurity and job guarantee equation (ρ)		.105
		(1.17)
Exclusion of instruments from insecurity equation, p-value		0.763
Exclusion of instruments from guarantee equation, p-value		0.030
Log-likelihood	-25213.02	-32160.99
Model p-value	0.0000	0.0000

If employers expect something in return for their job security guarantees, we might expect this to show up in the effect of job security guarantees on employees' perceptions of other aspects of their jobs. To investigate this possibility we ran identical analyses to those described above for job insecurity, but this time on seven different measures of the way employees viewed their jobs. Three of these measures relate to satisfaction with non-pecuniary aspects of the job (sense of achievement, respect from supervisors and influence over the job); a fourth relates to satisfaction with pay; the other three relate to perceptions of how hard employees feel they have to work, the time they have to get their job done, and worrying about work outside working hours. Details are contained in Appendix Table 2. In all cases job security guarantees are not significantly associated with negative perceptions of jobs along these seven dimensions. These results hold when treating job security guarantees as endogenous.[13] The only time in which the correlation between the unobservables in the outcome and job security guarantee equations (ρ) approaches statistical significance is in the pay satisfaction equation (t=1.43), producing a positive albeit non-significant (t=1.28) impact of the guarantee on pay dissatisfaction having accounted for the negative unobservable correlation between the guarantee and job dissatisfaction. Thus, it seems that job security guarantees reduce job insecurity and that this is not at the expense of other facets of the job.

Conclusions

Using linked employer-employee data for Britain, we show that, although job security guarantees are associated with an increased probability of workforce reductions, they 'work' in two key respects. First, conditional on workforce reductions, compulsory redundancies are less likely where there is a guarantee of job security. Secondly, controlling for a range of individual, job and workplace characteristics, we find job security guarantees are associated with lower perceptions of job insecurity. This appears to be a causal effect since the effect is robust to the treatment of the guarantee as endogenous. Indeed, treating the guarantee as exogenous underestimates its effect in reducing insecurity, a finding that is consistent with the contention that job security guarantee policies are often introduced at times when the workplace is undergoing organisational change or workforce reductions, both of which are

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[13] Our high labour costs instrument is not significant in any of these outcome equations, and remains significant throughout in estimating job security guarantees. This lends further weight to our argument that it is a reasonable instrument for estimating the effect of security guarantees on employees' job perceptions.

likely to create feelings of job insecurity. It does not seem that employers expect 'something in return' for the guarantee, since job security guarantees have no effect on a range of other employee perceptions of their working environment.

It is not possible to judge from this analysis whether the adoption of job security guarantees would have similar effects for new adopters of the policy. Nor can we identify the conditions under which guarantees can have the most beneficial effects. These might be fruitful avenues for future research.

Appendix Table 1: Mean scores for variables used in analysis

Job security guarantee: .143

Demographics

Female	.480
Age:	
<20	.056
20-24	.076
25-29	.126
30-39	.288
40-49	.247
50-59	.173
60+	.034
Academic qualifications:	
'A' level or above	.371
Below 'A' level	
None	.235
Poor health	.060
Non-white	.034
Children	.541
Married	.699
Union member	.391

Job characteristics

Occupation:	
Managerial	.097
Professional and skilled	.302
Other occupations	.601
Job done equally	
by men and women	.297
Family friendly index	.975
Day off in emergency	.972
Paid overtime	.459
10+ days training last year	.088
Permanent contract	.935
Gross weekly pay:	
<£50	.070
£51-£80	.069
£81-£140	.120
£141-£180	.088
£181-£220	.113
£221-£260	.106
£261-£310	.099
£311-£360	.082
£361-£430	.101
£431-£540	.078
£541-£680	.040

£681+	.034
Weekly hours	36.05
Tenure:	
<1 year	.161
1, <2 years	.124
2, <5 years	.233
5, <10 years	.221
10+ years	.261

Workplace characteristics

Industry:	
Manufacturing	.239
Elec, gas and water	.007
Construction	.031
Wholesale and retail	.155
Hotels and restaurants	.042
Transport, communication	.057
Financial services	.040
Other business services	.082
Public administration	.089
Education	.101
Health	.124
Other community services	.033
Region:	
London	.095
Scotland and Wales	.140
South of England	.317
Midlands	.195
North	.253
200+ employees at workplace	.437
Single workplace	.247
Public sector	.299
Head office, admin office or single establishment	.323
Workplace 21+ years old	.508
Female employment share	.483
% part-timers	.256
% management	.083
% professional, technical and craft	.316
% other occupations	.601
Unemployment of 5%+ in TTWA	.506
Union density	35.16
High wage share	.507

Note: family friendly index runs from zero to three, with a point scored everytime the following are available to the worker: job sharing, parental leave, flexitime.

Appendix Table 2: The impact of job security guarantees on other employee job attitudes

	Work hard		Job done		Worry a lot		Pay dissat.		Achieve dissat.		Respect dissat.		Influence dissat.	
	Exog	Endog	Exog	Endog	Exog	Endog	Exog	Endog	Exog	Endog	Exog	Endog	Exog	Endog
Guarantee	0.036	-0.214	0.076	0.076	0.046	0.055	-0.003	0.298	-0.061	-0.240	-0.026	-0.165	-0.031	-0.132
	(0.66)	(0.73)	(1.46)	(0.20)	(1.30)	(0.24)	(0.07)	(1.28)	(1.30)	(0.76)	(0.75)	(0.42)	(0.65)	(0.37)
ρ		0.142		0.000		-0.005		-0.170		0.101		0.078		0.057
		(0.96)		(0.00)		(0.04)		(1.43)		(0.64)		(0.37)		(0.31)
Log likelihood	-21086	-27998	-25884	-32840	-26856	-33820	-25866	-32817	-24549	-31492	-26321	-33280	-24221	-31162
Model p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes.

1) The table shows job security guarantee coefficients when regressed on seven employee job attitudes using ordered probit models. In each case the left-hand column treats the guarantee as exogenous while the right-hand column treats it as endogenous, using the same identification procedure as that described for job insecurity. In all cases the proportion of revenue/costs is positive and significant in the job security guarantee equation and is not statistically significant for the outcome variable.

2) The dependent variables are as follows:
   a. Work hard: agree/disagree scale response to 'My job requires that I work very hard' (with 'disagree' and 'disagree strongly' collapsed due to small numbers in those categories);
   b. Job done: agree/disagree scale response to 'I never seem to have enough time to get my job done';
   c. Worry a lot: agree/disagree scale response to 'I worry a lot about my work outside working hours';
   d. Pay dissat.: satisfaction scale response to 'The amount of pay you receive'
   e. Achieve dissat.: satisfaction scale response to 'The sense of achievement you get from your work';
   f. Respect dissat.: satisfaction scale response to 'The respect you get from supervisors/line managers';
   g. Influence dissat.: satisfaction scale response to 'The amount of influence you have over your job'.

3) Regressions use an identical set of controls to those used for the job insecurity models presented in Table 3. Regressions are run with survey stratification weights and account for the presence of repeated observations on the same establishment.

4) ρ is the correlation of unobservables between the outcome and job guarantee equation.

5) Asymptotically robust t-ratios in parentheses.

6) All regressions are run on the 19,050 observations with no missing data.

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