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Is job insecurity higher in leveraged buyouts?

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Abstract

This paper assesses whether job insecurity is higher in leveraged buyouts (LBOs) than elsewhere. It draws on matched employer-employee data from the British 2011 Workplace Employment Relations Study linked to data from the Centre for Management Buyout Research. The analysis finds no consistent evidence of higher job insecurity in LBOs as measured by workforce reduction practices (redundancy rates, job security/ no-compulsory redundancies policies and redundancy consultation), dismissal rates, labour use practices (non-permanent employment contracts and outsourcing), and employees' job security perceptions. Job insecurity is no higher in either current or former LBOs than elsewhere. Contrary to what might be expected, it is also no higher in private equity-backed LBOs, management buy-ins, or high-debt LBOs, and there is only partial and weak evidence of higher job insecurity in short-hold LBOs. Job insecurity is also no higher in perfect storm LBOs (PE-backed management buy-ins that are short-holds with high-debt). Concerns over the negative implications of LBOs for job security thus appear misplaced.

Keywords: JOB insecurity; LEVERAGED buyouts; PRIVATE equity; ALTERNATIVE investments; CORPORATE reorganizations.

1. Introduction

Interest in financial capitalism, which involves an increased role for financial markets and investment institutions in the global economy, has grown significantly in the past decade.

One specific form of financial capitalism – leveraged buyouts (LBOs) – has attracted considerable attention, particularly regarding its potentially harmful effects for labour (Appelbaum and Batt 2014; Bacon *et al.* 2004, 2013; Pendleton *et al.* 2014; Wood and Wright 2009). LBOs involve changes in ownership when investors such as private equity funds or groups of incumbent managers acquire underperforming firms (or divisions of firms) with a view to improving performance prior to sale typically five to six years later. The acquired firm is obliged to service the debt used for purchase and managers are provided with equity incentives to improve performance (Gilligan and Wright 2014).

Specific concerns have been raised regarding the damaging implications of LBOs for workers' job security. For example, drawing on case studies of European LBOs, the Party of European Socialists has expressed concerns regarding the divestiture of non-core operations leading to significant and rapid job cuts (PSE 2007). It concluded that restructuring in LBOs is 'inimical to the wider social interest ... leaving others in the society to pick up the cost' (ibid.: 4). Such costs, which may persist after the LBO is sold, include compulsory redundancies, limited social dialogue to mitigate restructuring, and replacing permanent workers with temporary workers.

In response to such concerns, the labour movement has waged a concerted international campaign to highlight the negative impact of LBOs on job security (PSE 2007; ITUC 2007). This campaign argued that certain types of LBO have especially deleterious effects, in particular: private equity (PE) backed LBOs¹ and management buy-ins² led by outsiders who lack identification with the workforce and emotional bonds to the firm (PSE 2007: 206); short-term LBOs that limit long-term investment (ibid.: 15); and LBOs characterised by high indebtedness (ibid.: 17). Inquiries by governments and financial regulators in many OECD countries have augmented these concerns (Evans and Hubbard 2008). Most notably, pressure from the European Parliament and the French and German governments resulted in the European Union's Alternative Investment Fund Managers Directive (AIFMD 1), adopted in 2010, which introduced requirements on capital, leverage and reporting for PE funds. The European Union's consultation on AIFMD 2 anticipated in 2019 will revisit this legislation, with the Party of European Socialists previously arguing AIFMD 1 did not go far enough (House of Lords 2010: 9).

However, in contrast to the labour movement's concerns, studies drawing on nationally representative data from various countries conclude LBOs have little overall impact on net employment (and by implication, on job security) (Amess 2018; Tåg 2012;

Wright *et al.* 2009). Although net employment initially declines in LBOs (Amess and Wright 2007, 2012), this decline is less than 1% in PE-backed LBOs after two years compared to control groups (Davis *et al.* 2014), and thereafter employment growth is similar to non-LBOs. LBOs thus appear to undergo a process of ‘creative destruction’ (ibid.: 3958) in which initial downsizing of non-core or low value operations is offset by subsequent employment growth in profitable operations.

However, this cannot necessarily be interpreted as suggesting LBOs have little negative effect on job security. For example, although net employment might remain stable, redundancy rates may be higher if the LBO reduces jobs in one part of the business while simultaneously increasing workforce size elsewhere (Davis *et al.* 2014). Additionally, dismissal rates for underperformance may be higher, and permanent employees might be replaced by non-permanent or agency contract staff. Little systematic assessment of nationally representative data has been conducted to date on these broader job security indicators. Although Bruining *et al.*’s (2005) study reported no change in job security/ no-compulsory redundancies policies, internal promotion and use of temporary workers following LBOs, it assessed only a narrow range of job security indicators and lacked a comparison group of non-LBOs. Our paper overcomes these limitations (and thus makes a distinctive contribution to the literature) by drawing on nationally representative data with a non-LBO control group, and by exploring a wide range of job security indicators, including: workforce reduction practices (redundancy rates, job security/ no-compulsory redundancies policies and redundancy consultation); dismissal rates; labour use practices (use of non-permanent contract workers and employment outsourcing); and employee perceptions of job security.

The paper makes further distinctive contributions by considering whether LBOs have legacy effects on job security after sale, due to reduced investment or the persistence of a

culture of value extraction. Additionally, we seek to identify whether job insecurity is higher in the types of LBOs the labour movement argues have the most deleterious effects (PSE 2007), specifically: PE-backed LBOs; management buy-ins; short-hold deals; LBOs incurring high indebtedness; and potentially worst-case scenario LBOs comprising a perfect storm of all these characteristics.

The analysis is conducted using a unique dataset constructed by matching data from the Centre for Management Buyout Research into the 2011 Workplace Employment Relations Study.

2. LBOs and different job insecurity indicators

Two main theoretical perspectives associate LBOs with increased job insecurity: agency theory and wealth transfer theory. Agency theory frames LBOs as restructuring transactions that improve corporate governance to remedy the agency costs associated with publicly-listed corporations. Although managers in publicly-listed corporations are, as agents of owners, expected to maximise shareholder value, they may also utilise the firm's resources for their own private benefit, thus generating agency costs that reduce shareholder value (Jensen and Meckling 1976). Examples of such costs – which are most likely in firms with significant free cash flow – include 'empire-building projects with low or negative returns, bloated staffs, indulgent perquisites, and organizational inefficiencies' (Jensen 1989: 67). Agency theory suggests LBOs address these costs by focusing managers' attention on firm performance in three ways: first, investors engage in direct monitoring of the firm; second, senior managers are provided with significant equity stakes to align their interests with those of owners; and third, servicing the debt used to acquire the firm restricts unnecessary expenditure. This heightened attention on performance is in turn likely to increase managerial efforts to

restructure the firm. However, this restructuring could have negative implications for job security given that it may involve downsizing, closure and divestments.

Regarding wealth transfer theory, this views the firm as a nexus of contracts that LBO investors will rearrange in order to transfer wealth from employees to the new owners (Shleifer and Summers 1988). LBO investors and managers from outside the firm are considered more willing than incumbent managers to abrogate long-term contracts with employees (regarding job security, for example) in order to facilitate extensive restructuring. This is required to service interest payments and pay down debt in order to return retained earnings to investors. Less funding is thus available for job security-enhancing employment practices (avoidance of redundancies and hiring staff on permanent contracts, for example), than would be the case in publicly-listed corporations. As such, LBOs are considered hostile to workers because outside investors and managers seek personal enrichment in part by reneging on job security promises.

Drawing on these two theories, the ensuing discussion develops hypotheses concerning the effects of LBOs on a range of job security indicators.

Turning first to redundancy rates, both agency theory and wealth transfer theory suggest LBOs will engage in rapid restructuring and thus favour redundancies over more gradual workforce reduction. Agency theory suggests direct monitoring by LBO investors will help ensure managers pursue this course of action, while wealth transfer theory suggests investors will have few concerns over abrogating long-term contracts regarding redundancy avoidance. According to PSE (2007: 189-209), LBOs are thus unlikely to follow good practice advice to avoid compulsory redundancies by reducing staffing through natural attrition, not filling vacant posts or early retirement (see ACAS 2014). They may also eschew job security/ no-compulsory redundancies policies (PSE 2007: 110) even where net

employment change is limited, given restructuring may involve large-scale redundancies in one part of the business while increasing workforce size elsewhere. Hence:

H1a: Redundancy rates are higher in LBOs than in non-LBOs.

H1b: Job security/ no-compulsory redundancies policies are less likely in LBOs than non-LBOs.

LBOs may also eschew requirements for consultation with the workforce when handling redundancies. Agency theory suggests LBOs will address organisational inefficiencies by shutting down projects with low or negative returns as quickly as possible, and will not be prepared to delay to allow for consultation. Wealth transfer theory similarly suggests LBOs will be unconcerned about abrogating implicit assumptions regarding redundancy consultation (Appelbaum *et al.* 2013). Indeed, PSE (2007: 20 and 110) argues that LBOs will often withdraw from social dialogue and fail to honour existing collective agreements, with managers making decisions to cut jobs unilaterally. Additionally, even where redundancy consultation occurs, it might be anticipated that LBOs will be unwilling to change their plans and consider reducing the number of redundancies, redeploying affected employees elsewhere in the organisation, taking a longer-term approach, or mitigating negative effects on workloads (see ACAS 2014). Hence:

H2a: Redundancy consultation is less likely in LBOs than non-LBOs.

H2b: Where redundancy consultation takes place, positive changes to managers' original proposals are less likely in LBOs than non-LBOs.

Turning to dismissals, agency theory suggests one element of investor monitoring will be to track and review the individual performance of managers and employees, with underperformance leading to dismissal (Jensen 1989). Wealth transfer theory similarly suggests that LBOs will dismiss underperforming staff to increase investor gains. This is supported by evidence of LBOs introducing performance management programmes involving threats of summary dismissal (Clark 2016: 245), and the opportunistic dismissal of staff when on sick leave or on holiday (PSE 2007: 201). Hence:

H3: Dismissal rates are higher in LBOs than in non-LBOs.

Agency theory and wealth transfer theory also suggest that non-permanent employment contracts and outsourcing will be more widespread in LBOs. Consistent with agency theory, LBO investors may regard permanent employment contracts as an indulgent perquisite, and seek to replace them with fixed-term or agency contracts, or outsource work altogether to reduce costs and facilitate numerical flexibility. Wealth transfer theory also suggests LBOs will seek to cut costs by replacing permanent employees with fixed-term workers, agency workers or outsourced labour (ITUC 2007: 30). Supporting these assertions, PSE (2007: 110) argues ‘in the majority of cases full-time, sustainable jobs are lost’, with new jobs characterised by ‘low-skill, often temporary and sometimes precarious employment’. There is also evidence that LBOs outsource business activities to a greater extent than non-LBOs (Harris *et al.* 2005), with the labour movement highlighting instances of outsourcing that ‘left only a shell of a company’ (IUF/UITA/IUL 2007: 15). Hence:

H4a: LBOs have a higher proportion of staff on temporary, fixed-term and agency contracts.

H4b: Fixed-term and temporary agency staff (where used) are more likely to carry out work previously done by permanent employees on open-ended contracts in LBOs than in non-LBOs.

H5a: LBOs are more likely to contract out work to independent contractors.

H5b: LBOs contract out a wider range of activities to independent contractors.

Given the above arguments, it is consistent with agency and wealth transfer theories that employees will feel less secure in LBOs than elsewhere. LBO investors may regard this as helpful in disciplining employees to accept reduced staffing levels and work harder (Goergen *et al.* 2014a: 150). However, no previous studies using nationally representative data have explored employee perceptions of job security in LBOs. Hence:

H6: Employees are less likely to feel their job is secure in LBOs than in non-LBOs.

3. Legacy effects

Few prior empirical studies have sought to assess whether LBOs have lasting legacy effects on the workforce, even though understanding such effects is important to assess the economic and social impact of LBOs. It is unclear whether LBOs will have lasting legacy effects such that job insecurity persists in former LBOs post-sale to a corporate buyer or via stock market flotation. Wealth transfer theory suggests negative legacy effects will occur as a culture of wealth transfer and abrogation of implicit contracts becomes normalised in LBOs (PSE 2007; Froud and Williams 2007). Although these effects may fade over time, it might nevertheless be expected that job insecurity will be greater in former LBOs than in non-LBOs.

In contrast, agency theory suggests LBOs may not leave a legacy of job insecurity. Instead, agency costs may recur when LBOs return to ownership by publicly-listed

corporations, with managers resuming empire-building, over-staffing, indulgent perquisites and organisational inefficiencies. However, agency costs may not recur immediately after LBOs return to public trading (Bruton *et al.* 2002), given that although debt ratios are typically lower in former than current LBOs, they remain significantly higher than in publicly-listed corporations that have not undergone an LBO (Holthausen and Larcker 1996). The ongoing restriction to free cash flow will likely result in further restructuring and employment practices associated with higher job insecurity. Information asymmetry between the sellers and buyers of LBOs may also result in sale at peak operating performance, with subsequent decreases in performance after returning to public ownership (Degeorge and Zeckhauser 1993) being potentially harmful to job security.

As such, agency problems might only re-emerge several years after the LBO is sold. Coupled with the likelihood that (as argued above) wealth transfer effects will fade over time, it might therefore be expected that while more recent LBO exits will have higher levels of job insecurity than non-LBOs, there may be little difference in job security between non-LBOs and older LBO exits. Hence:

H7: Job insecurity is higher in both current LBOs and in recently-exited LBOs than in older LBO exits and non-LBOs.

4. LBO types and job insecurity

As indicated above, the negative impact of LBOs on job insecurity is attributed to the involvement of outsiders, short-termism and debt. Therefore, job insecurity may be especially pronounced in LBOs that are PE-backed, a management buy-in (rather than a management buyout), short-term, or have a high-debt ratio. The ensuing discussion develops hypotheses concerning the implications of these LBO types for job security.

Turning first to PE-backed LBOs and management buy-ins, both agency and wealth transfer theories suggest that job insecurity will be higher in such LBOs than in non-PE-backed deals or management buyouts led by incumbents. According to agency theory, the promise of alpha returns incentivises PE general partners and buy-in managers to participate directly in strategy development and implementation (Jensen 1989), and this might result in particularly deep and rapid restructuring (and hence higher job insecurity). Wealth transfer theory suggests that such investors aim to ‘achieve significant personal gain from the default on stakeholder claims ... irrespective of the outcomes for individual plants, firms, suppliers, employees or local economies’ (Appelbaum *et al.* 2013: 499). As outsiders, they lack identification with the workforce and emotional bonds to the firm, and will not feel obligated to uphold long-term contracts regarding job security (PSE 2007: 206; Shleifer and Summers 1988: 41-2).

However, the empirical evidence on this matter is mixed. On the one hand, Bacon *et al.* (2008) report job security/ no-compulsory redundancies policies, internal promotion and the use of temporary workers is no different in PE-backed than in non-PE-backed LBOs. On the other hand, consistent with the arguments outlined above, Goergen *et al.* (2014b) find significant net employment decline in PE-backed LBOs, and Amess and Wright (2007) find higher rates of employment decline in management buy-ins than in management buyouts.

Hence:

H8: Job insecurity is higher in PE-backed LBOs than in non-PE-backed LBOs and non-LBOs.

H9: Job insecurity is higher in management buy-ins than in management buyouts and non-LBOs.

Turning to length of hold, agency theory suggests short-hold LBOs will be particularly likely to engage in workforce downsizing via compulsory redundancies (rather than natural attrition) given the need for rapid restructuring within a short timeframe. In such instances, LBO investors are also likely to eschew forward workforce planning, job security policies (see: Bacon *et al.* 2012: 620-1) and redundancy consultation (PSE 2007: 110). Wealth transfer theory similarly suggests that short-hold LBOs will be particularly willing to default on long-term contracts with employees to increase the firm's attractiveness for a quick sale (Appelbaum *et al.* 2013: 503). This might involve introducing a results-oriented culture to deliver short-term returns (*ibid.*: 508), which might lead to increased dismissals for underperformance. It might also involve replacing permanent employment contracts with cheaper, more flexible non-standard contracts. However, the impact of time to exit has rarely been studied systematically. Hence:

H10: Job insecurity is higher in short-hold LBOs than in long-hold LBOs and non-LBOs.

Finally, job insecurity might be particularly prevalent in high-debt LBOs. Agency theory suggests the need to service debt in LBOs eliminates free cash flow and encourages rapid restructuring (Jensen 1989: 67), which is likely to increase job insecurity. Wealth transfer theory also suggests servicing high debt ratios incurred on buyout will require dramatic cost cutting (Shleifer and Summers 1988). As such, Appelbaum and Batt (2014) argue that excessive debt is a primary cause of downsizing and job insecurity.

Case studies provide empirical support for these arguments. For example, PSE (2007: 110) highlights examples of indebtedness leading to job losses and strain on redundancy consultation processes, failures to honour collective agreements and withdrawal from social

dialogue (ibid.: 20), and has called for the introduction of maximum debt ratios for LBOs to protect employment (ibid.: 26). Hence:

H11: Job insecurity is higher in high-debt ratio LBOs than in low-debt ratio LBOs or non-LBOs.

However, while we hypothesise that job insecurity will be particularly high in certain types of LBOs, it will arguably be highest in LBOs with several (or all) of these characteristics, with the combined effect of diverse financial mechanisms often highlighted in predicting negative labour outcomes (Appelbaum *et al.* 2013). For example, a ‘short-term focus on shareholder maximization’ combined with ‘the leveraged debt model’ (ibid.: 514) underpins the notion of ‘stripping and flipping’ (Elliott 2007), whereby assets are sold off and employment and investment are reduced to help pay down high debt and improve profitability, thus enabling a quick sale or stock market flotation. The resulting value extraction is likely to have adverse implications for job security. This is particularly likely to happen where such LBOs are PE-backed management buy-ins, given the investors, who have no emotional bonds to the workforce, are likely to engage in direct oversight to ensure the necessary operational restructuring is implemented. Hence, we evaluate job insecurity in perfect storm LBOs (PE-backed management buy-ins that are short-hold and have high-debt). Assessing this potential worst-case scenario for labour explicitly tests the claims of campaigns that target LBOs with multiple supposedly negative characteristics (PSE 2007):

H12: Job insecurity is higher in perfect storm LBOs than in non-perfect storm LBOs and non-LBOs.

5. Data and Method

Our dataset was constructed by matching the Centre for Management Buyout Research (CMBOR) database of UK buyouts to the 2011 Workplace Employment Relations Study (WERS 2011) (Department for Business, Innovation and Skills *et al.* 2014). This enabled a range of unique variables to be imported from CMBOR into WERS concerning whether the workplace is (or has been) bought-out, and characteristics of the buy-out. WERS is designed to be nationally representative of British workplaces with five or more employees within Standard Industrial Classification major groups D to O (agriculture, hunting, forestry and fishing, and mining and quarrying are excluded), when probability weighted to account for the over-sampling of larger workplaces. It contains a management survey and employee survey matched at workplace-level. The management survey comprises 2,680 observations with a 46.5% response rate. The respondent is the workplace manager with primary responsibility for employment relations matters. In total 1,572 workplaces are used in our workplace-level analysis once workplaces with missing data and public sector workplaces are excluded. The WERS survey of employees (sent to a random sample of up to 25 employees in 2,170 workplaces where the management respondent granted permission) comprises 21,981 responses, with a 54.3% response rate (van Wanrooy *et al.* 2013). We use the linked WERS employer-employee data to evaluate employee perceptions of job security in LBOs, with 9,883 employee responses used once employees in public sector workplaces and observations with missing data are excluded.

The CMBOR database has recorded LBOs and collected data on all buyout deals since 1980, hence it is the most comprehensive data source on LBO transactions, and is widely used across the management, financial economics and industrial relations fields. The database has no lower or upper deal size bound with data collected from primary (surveys of PE firms, advisors, for example) and secondary (media and stock exchange circulars, for

example) sources to provide a comprehensive dataset that uniquely identifies all LBOs in Britain.

The CMBOR and the WERS data were matched with the assistance of the UK Office for National Statistics (ONS) using Inter-Departmental Business Register numbers (a comprehensive list of UK businesses used for governmental statistical purposes). This matching process identified that 147 workplaces in WERS 2011 had undergone a buyout recorded in the CMBOR database (once missing data are accounted for). As constructing the matched data set contravened normal WERS conventions on anonymity, the data were matched and analysed in the UK Data Service's secure data lab.

Dependent variables

The dependent variables were taken from the WERS 2011 management survey and analysed at workplace level, except for the employee perceptions of job security variable, which was taken from the linked employee survey and analysed at individual level. Variable means are reported in Appendix Table 1.

Redundancy and dismissal rates. These were calculated by dividing the number of employees made redundant and the number dismissed in the past year by the number of employees at the workplace a year prior to the survey date.

Job security/ no-compulsory redundancies policy. Dichotomous measure in which 1= 'policy of guaranteed job security or no-compulsory redundancies for non-managerial employees' and 0= 'otherwise'.

Redundancy consultation. Two measures were developed. The first concerns whether (in instances where redundancies occurred) redundancy consultation took place, with management respondents being asked 'Did you consult with employees or their representatives prior to making anyone redundant?' (1= 'yes', 0= 'no'). The second concerns

whether redundancy consultation led to a positive change. Management respondents were asked, in instances where redundancy consultation took place: ‘Did the consultation lead to any of the following changes in managers’ original proposals: reduction in the number of redundancies; changes in the criteria for selection; increase in redundancy payments; alternatives to redundancy; preparing employees for redundancy; strategies for redeployment?’. We constructed a measure in which 1= ‘managers answered positively regarding any of these outcomes’, and 0= ‘otherwise’.

Non-standard contracts and contracting out. Measures for the proportion of employees on temporary/ fixed-term contracts and agency contracts were calculated by dividing the number of employees on these contract types by the total number of workplace employees.

Management respondents were asked whether fixed-term employees or agency staff carry out work previously done by staff on open-ended contracts. We created separate dichotomous measures where 1= ‘yes, all of them’ or ‘yes, some of them’, and 0= ‘no’. Concerning contracting out, managers were asked: ‘Are any of the activities or services on this card (from a list of 11) carried out for this workplace by independent contractors?’ (e.g. cleaning, security, catering, maintenance). We created two variables: a dichotomous variable where 1= ‘any contracting out’ and 0= ‘otherwise’; and a measure of contracting out breadth (count measure of the number of activities contracted out).

Employee perceptions of job security. The employee survey asks whether respondents agree or disagree with the statement ‘I feel my job is secure in this workplace’ (five-point scale from 1= ‘strongly disagree’ to 5= ‘strongly agree’).

Independent variables

The independent variables outlined below were taken from the CMBOR database. Appendix Table 1 presents the means.

LBOs. Dichotomous variable in which 1= 'LBO workplace'; 0= 'non-LBO workplace'.

Current and exited LBOs. Not all workplaces undergoing LBOs since 1980 remained bought-out at the time of the WERS survey. To explore legacy effects, we created a categorical variable where 1= 'Current LBOs' bought-out at the time of the WERS 2011 management interview; 2= 'Exited<6 years ago' (former LBOs exiting less than 6 years prior to the WERS interview); 3= 'Exited $\geq$ 6 years ago' (former LBOs exiting 6 years or more prior to the WERS interview); and 4= non-LBOs. We adopt a 6 year cut-point to allow sufficient time for the repayment or refinancing of buyout debt following exit.

PE-backed LBOs. Categorical independent variable where: 1= 'PE-backed LBOs'; 2= 'non-PE-backed LBOs'; and 3= 'non-LBOs'.

Management buy-ins. Categorical independent variable where: 1= 'management buy-ins'; 2= 'management buyouts' (including management-employee buyouts and employee buyouts); and 3= 'non-LBOs'.

Short/long-hold LBOs. Drawing on data on the buyout date and exit/sale date, we created a categorical independent variable where: 1= 'short-hold LBOs' (0 to less than 4 years); 2= 'long-hold LBOs' (4 years or more); and 3= 'non-LBOs'.

Debt. Debt ratios are calculated at the buyout-level as total debt (senior debt + mezzanine debt + high-yield debt) divided by total finance. We created a categorical independent variable where: 1= 'high-debt ratio LBOs' with a debt ratio $\geq$ 50%; 2= 'low-debt ratio LBOs' with a debt ratio <50%; and 3= 'non-LBOs'.³

Perfect Storm LBOs. To calculate the effects of LBOs with multiple (potentially) negative characteristics, we created a categorical independent variable where: 1= 'perfect storm LBOs' with four specific characteristics (PE-backed; management buy-in; short-hold; high-debt); 2= 'non-perfect storm LBOs' with three or fewer of these characteristics⁴; and 3= 'non-LBOs'.

Control variables

All equations contain the following workplace-level controls: organisation size; log of workplace size; single independent workplace; SIC major group; national ownership; workplace age; union recognition; proportion of workforce female, ethnic minority, aged 50 or over, part-time, and in each SOC major group. Equations assessing employee perceptions of job security also control for respondent's: SOC major group; pay band; marital status; age; job tenure; highest qualification; part-time, temporary or fixed-term contract; union membership; ethnicity; gender; disability; and dependent children. Appendix Table 1 reports further details and means.

Analysis Procedure

To test hypotheses 1 to 5, workplace-level equations were estimated where the independent variable was the dichotomous LBO workplace measure and the workplace-level control variables were as listed above. The same equation was estimated with different dependent variables to test each hypothesis. Where the equations for redundancy rates (H1a), dismissal rates (H3) and proportion of staff on temporary, fixed-term and agency contracts (H4a) are concerned, a fractional logit model was used given these dependent variables are proportions naturally bounded between 0 and 1. Fractional logit models, unlike Ordinary Least Squares (OLS), generate predictions within the unit interval and are appropriate where zero and one values occur within the data (Papke and Wooldridge 1996). Probit analysis was used for equations with dichotomous dependent variables: job security/ no-compulsory redundancies policy (H1b); redundancy consultation (H2a); effect of redundancy consultation (H2b); fixed-term or temporary agency staff performing work previously done by permanent employees (H4b); any contracting out (H5a). The equation for the 'contracting out breadth' dependent variable (H5b) used a poisson model given the dependent variable is a count measure

(Cameron and Trivedi 1998: 9).

To test H6 (whether employees are less likely to feel their job is secure in LBOs than in non-LBOs), the linked employer-employee data were used and an equation estimated at individual-level in which the dependent variable was employees' perceptions of job security, and the independent variable was whether the individual's workplace was an LBO or otherwise. This equation also included controls for the individual's demographic characteristics (see Appendix Table 1 for details) and controls for the characteristics of the individual's workplace. Multi-level mixed effects modelling incorporating both fixed and random effects was used to account for the data's multi-level structure in which employee responses are nested within workplaces. This procedure allows the variance to be partitioned into within (Level 1) and between (Level 2) workplace variation. This enables between-workplace variance to be controlled for, thereby avoiding violating assumptions of independent observations in multiple regression as employees within a given workplace are not independent from each other. In equation 12 in Table 1, the amount of variance in employee perceptions of job security due to between-workplace variation is $0.157 / [0.793 + 0.157] = 16.5\%$.

To test H7 to H12, the above procedures were repeated but the dichotomous LBO independent variable was replaced in turn by the categorical independent variables for: current and exited LBOs (H7); PE-backed and non-PE-backed LBOs (H8); management buy-ins and management buyouts (H9); short and long-hold LBOs (H10); high and low-debt ratio LBOs (H11); and perfect storm and non-perfect storm LBOs (H12).

The analysis was weighted throughout to account for the complex nature of the WERS survey design.⁵ This procedure allows unbiased population estimates to be obtained. In the multi-level model, the weights were scaled to ensure consistency across lower-level

clusters. The scaling specified that first-level (observation-level) weights were scaled so they summed to the sample size of their corresponding second-level cluster.

6. Results

Table 1 reports the analysis of job insecurity in LBOs relative to non-LBOs.⁶ There is no support for H1a that redundancy rates are higher in LBOs than in non-LBOs (equation 1), and no support for H1b, with LBOs and non-LBOs being equally likely to have job security/ no-compulsory redundancies policies (equation 2). Additionally, the likelihood of redundancy consultation and of positive changes in response to consultation is no lower in LBOs than non-LBOs, hence there is no support for either H2a or H2b (equations 3 and 4). Where dismissal rates are concerned (H3), these are no higher in LBOs than non-LBOs (equation 5). There is no support for H4a that LBOs have a higher proportion of staff on temporary, fixed-term or agency contracts than non-LBOs (equations 6 and 8), or for H4b that fixed-term/ agency staff are more likely to perform work previously done by permanent employees in LBOs (equations 7 and 9). LBOs are also no more likely than non-LBOs to use contracting out (H5a, equation 10), and contrary to H5b, LBOs contract out a narrower range of activities than non-LBOs (equation 11). There is also no support for H6 that employees in LBOs are less likely to feel their job is secure (equation 12).

In short, there is no evidence in the results presented in Table 1 that job insecurity is poorer in LBOs than in non-LBOs.⁷

INSERT TABLE 1 HERE

Legacy effects

Turning to LBO legacy effect, H7 proposes that job insecurity is higher in both current LBOs and in recently-exited LBOs than in older LBO exits and non-LBOs. The results in Table 2 do not reveal a consistent pattern. Only one of the significant findings suggest support for H7, with equation 8 providing weak evidence (at the 10% level) that agency worker use is lower in LBOs that exited six or more years ago than in non-LBOs (but is not lower in LBOs that exited less than six years ago and current LBOs than in non-LBOs). This hints at the emergence of agency problems several years after the LBO is sold. Some job insecurity indicators (job security/ no-compulsory redundancies policies (equation 2) and redundancy consultation having a positive impact (equation 4)) are poorer in current LBOs, but not in any of the exited LBOs, than in non-LBOs. This suggests, contrary to H7, agency problems reappear soon after the LBO is sold.

Beyond this, other results suggest job insecurity worsens in LBOs after sale. LBOs that exited six or more years ago (but not LBOs that exited less than six years ago) are more likely than non-LBOs to have fixed-term workers doing work previously done by permanent employees (equation 7), while current LBOs are slightly less likely than non-LBOs to have fixed-term workers doing work previously done by permanent employees. Also, the likelihood of agency staff doing work previously done by permanent employees (equation 9) and contracting out breadth (equation 11) are lower in current (but not any of the exited) LBOs than in non-LBOs.

Overall, therefore, the results reveal no consistent pattern with regard to LBO legacy effects, and only one is weakly consistent with H7. As such, H7 is not supported.

INSERT TABLE 2 HERE

PE-backed LBOs

H8 is that job insecurity is higher in PE-backed LBOs than in non-PE-backed LBOs and non-LBOs.⁸ Only one of the results in Table 3 supports this hypothesis, with contracting out being slightly less prevalent (at the 10% level) in non-PE-backed LBOs (but not non-LBOs) than in PE-backed LBOs. Against the hypothesis, however, the breadth of contracting out is higher in non-LBOs than in PE-backed LBOs (equation 11), and employee perceptions of job security are slightly poorer (at the 10% level) in non-PE-backed LBOs than in PE-backed LBOs (equation 12). There is no evidence PE-backed LBOs have higher job insecurity on any of the other indicators. Overall, therefore, H8 is not supported.⁹

INSERT TABLE 3 HERE

Management buy-ins

H9 is that job insecurity is higher in management buy-ins than in management buyouts and non-LBOs. Table 4 shows, in support of H9, that job security/ no-compulsory redundancies policies are more prevalent in management buyouts and non-LBOs than in management buy-ins (equation 3). However, contrary to H9, dismissal rates (equation 5) and redundancy rates (at the 10% level (equation 1)) are higher in management buyouts than in management buy-ins, and they are no different in management buy-ins than in non-LBOs. Also contrary to H9, agency staff are more likely to be doing work previously done by permanent employees in management buyouts (and non-LBOs at the 10% level) than in management buy-ins (equation 9), and contracting out breadth is greater in non-LBOs than in management buy-ins (equation 11). Furthermore, employee perceptions of job security are lower (at the 10% level) in management buyouts than in management buy-ins (equation 12). On balance, therefore, looking across all the measures, H9 is not supported.¹⁰

INSERT TABLE 4 HERE

Short-hold LBOs

H10 is that job insecurity is higher in short-hold LBOs than in long-hold LBOs and non-LBOs. In support of H10, Table 5 shows redundancy consultation is slightly more prevalent (at the 10% level) in both long-hold LBOs and non-LBOs than in short-hold LBOs (equation 3). In addition, redundancy consultation is slightly more likely (at the 10% level) to have a positive impact in non-LBOs than in short-hold LBOs (equation 4). Also in support of H10, fixed-term workers are less likely to be doing work previously performed by permanent employees in long-hold LBOs and non-LBOs than in short-hold LBOs (equation 7), and contracting out is slightly less prevalent (at the 10% level) in long-hold than in short-hold LBOs (equation 10).

However, contrary to H10, long-hold LBOs are less likely to have a job security/ no-compulsory redundancies policy than short-hold LBOs (equation 2), and both long-hold LBOs and non-LBOs make greater use of agency staff than short-hold LBOs (equation 8). Beyond this, redundancy and dismissal rates (equations 1 and 5), the use of temporary/ fixed-term contracts (equation 6), the likelihood that agency staff do work previously performed by permanent employees (equation 9) and the breadth of contracting out (equation 11) are no different in short-hold LBOs than elsewhere. In addition, employee perceptions of job security are no lower in short-hold LBOs than elsewhere (equation 12).

On balance, therefore, while the results in relation to four of the measures suggest support for H10, the results in relation to the other eight measures do not (with two of these measures being in direct contravention of H10). As such, support for H10 is at best partial and weak.¹¹

INSERT TABLE 5 HERE

High-debt ratio LBOs

The results relating to H11 (job insecurity is higher in LBOs with high debt ratios than in low-debt ratio LBOs or non-LBOs) are reported in Table 6. In support of H11, job security/no-compulsory redundancies policies are more prevalent in low-debt LBOs and non-LBOs than in high-debt LBOs (equation 2).

However, contrary to the hypothesis, although redundancy consultation occurred in all high-debt (and low-debt) LBOs,¹² it is less likely to have a positive impact in low-debt LBOs (and non-LBOs at the 10% level) than in high-debt LBOs (equation 4). Also contrary to H11, employee perceptions of job security are poorer in non-LBOs than in high-debt LBOs (equation 12). On balance, therefore, H11 is not supported.¹³

INSERT TABLE 6 HERE

Perfect Storm LBOs

H12 is that job insecurity is higher in perfect storm LBOs than in non-perfect storm LBOs and non-LBOs. In support of H12, Table 7 shows non-LBOs are slightly more likely (at the 10% level) than perfect storm LBOs to have a job security/no-compulsory redundancies policy (equation 2). Also, contracting out is less prevalent in non-perfect storm LBOs (but not in non-LBOs) than in perfect storm LBOs (equation 10).

However, none of the other results in Table 7 support H12. Indeed, contrary to H12, there were no redundancies in any perfect storm LBOs. In addition, the likelihood of agency staff doing work previously done by permanent employees is higher in non-LBOs and slightly higher in non-perfect storm LBOs (at the 10% level) than in perfect storm LBOs (equation 9). Particularly notable is that employees' perceptions of job security are poorer in both non-perfect storm LBOs and non-LBOs than in perfect storm LBOs (equation 12).

Across the results as a whole, therefore, job security is not poorer in perfect storm LBOs than elsewhere. Indeed, employees report the opposite is true. As such, H12 is not supported.

INSERT TABLE 7 HERE

7. Discussion and Conclusions

This paper has sought to address the disjuncture within the literature between case studies suggesting LBOs have negative implications for job insecurity and quantitative research suggesting LBOs have little effect on net employment change, by providing the first systematic, nationally representative examination of the impact of LBOs on a broad range of job insecurity indicators. Our findings add to the existing quantitative research – which has the advantage of drawing on nationally representative data but focuses largely on net employment – by exploring other important job insecurity indicators including workforce reduction practices, dismissal rates, labour use practices and employee perceptions of job security. They also add to the existing qualitative research – which has the advantage of exploring a range of job insecurity indicators yet is often fragmented and potentially unrepresentative, and on occasion is arguably reported inconsistently¹⁴ – by providing a systematic, large-scale representative analysis. We also make a distinctive contribution by assessing whether negative legacy effects persist after the LBO is sold on, and by assessing whether job insecurity is higher in specific types of LBOs the labour movement identifies as particularly damaging (PE-backed, management buy-in, short-hold and high-debt LBOs).

Overall, our analysis found that LBOs do not appear to have negative job security implications when compared to non-LBOs regarding workforce reduction practices, dismissal rates and labour use practices. It also found employees' perceptions of job security are no

different in LBOs than in non-LBOs. Therefore, the findings do not support previous arguments in the literature that LBOs have negative job insecurity implications (Appelbaum and Batt 2014; Appelbaum *et al.* 2013). Instead, they concur with the conclusions drawn from studies reporting limited changes in LBOs to net employment (Amess 2018; Amess and Wright 2007, 2012; Bacon *et al.* 2013; Davis *et al.* 2014; Tåg 2012; Wright *et al.* 2009), job security/ no-compulsory redundancies policies, internal promotion and use of temporary workers (Bruining *et al.* 2005).

Our conclusions are further reinforced by the results assessing job insecurity in the LBO types the labour movement specifically associates with poorer job security (PSE 2007). We found job insecurity to be no higher in PE-backed, management buy-in or high-debt LBOs, and we found only partial and weak evidence that it is higher in short-hold LBOs. Nor is job insecurity higher in supposedly worst-case scenario perfect storm LBOs with all of these characteristics. Our results for PE-backed LBOs are particularly notable given their consistency with prior reports that PE-backed LBOs do not have negative job insecurity implications (Bacon *et al.* 2008). This in turn suggests the widespread criticism of PE may be misplaced.

The question remains, however, as to why our conclusions differ so markedly from those based on case studies of individual LBOs. One interpretation is that in some instances LBOs may well have led to downsizing and job insecurity (as much of the case study research demonstrates). However, our analysis, based on nationally representative data, suggests these cases are far from the norm. As such, while LBOs may occasionally have led to higher job insecurity, this does not appear to hold for the average firm subject to an LBO in the population of firms as a whole.

With regard to theoretical implications, our analysis does not support predictions from either wealth transfer theory or agency theory. Wealth transfer theory argues investors

extract wealth from LBOs by abrogating long-term contracts and implicit assumptions regarding job security, thus gaining at labours' expense. The results do not support this argument, with the similarity in employees' job security perceptions in LBOs and non-LBOs in particular suggesting employees in LBOs do not perceive contract abrogation regarding job security. Where agency theory is concerned, while direct monitoring and oversight by LBO investors to address wasteful agency costs may well result in significant firm restructuring, our evidence suggests this does not lead to heightened job insecurity. Hence, while LBOs may address corporate waste and mismanagement, this does not appear to impose excessive job insecurity costs on labour.

Also regarding theoretical implications, the counter intuitive finding that employees perceive higher job security in perfect storm LBOs than in non-LBOs is noteworthy. One potential explanation for this finding stems from entrepreneurial theories that regard LBOs as seeking to develop sustainable growth opportunities previously held back by financial constraints in publicly-listed corporations (Wright *et al.* 2000). Realisation of growth opportunities might require a combination of outside expertise (PE and new managers), high debt and a short-term orientation to ensure rapid development of the acquisition (in other words, perfect storm LBOs). If this sustainable growth in turn leads to higher job security, this would explain our finding that job security is higher in perfect storms than elsewhere. We can, however, only speculate on this potential explanation, hence further research on this matter is warranted.

The findings also have implications for public policy, specifically the European Union's consultation on AIFMD 2 anticipated in 2019. Given we find job insecurity to be similar for employees in LBOs and non-LBOs, the findings offer no support for increased regulation of LBOs to protect job security. The findings also suggest regulatory proposals targeting PE funds and management buy-ins, or recommending maximum debt ratios for

LBOs, will not result in higher job security. They also suggest that regulation of short-term LBOs will have only a marginal impact, given we find only limited evidence such LBOs have negative job security implications. As such, the findings indicate AIFMD 1 imposes unnecessary burdens on the PE industry, rather than supporting the Party of European Socialists' view that AIFMD 1 did not go far enough.

The analysis presented here contains several strengths, not least the representativeness of the data, the inclusion of a non-LBO control group and protection from common method bias given the dependent and independent variables used in the analysis were drawn from separate data sources. Nevertheless, it also contains several caveats and suggestions for future research. First, sample selection bias may explain the lack of a negative LBO effect. This might occur if LBO workplaces typically had higher job security pre-buyout relative to other workplaces, which subsequently reduced post-buyout to the same level as elsewhere. To explore this possibility, we conducted post-hoc tests drawing on the WERS panel data to evaluate whether non-LBO workplaces in the 2004 panel wave that subsequently became LBOs had particularly high levels of job security. Bearing in mind that only 21 workplaces in the WERS 2004 data fit this profile, our analysis found (in support of the selection effects argument) these workplaces were less likely to use temporary/ fixed-term contract workers and agency staff. Against this, however, none of the workplaces that later became LBOs had a job security/ no-compulsory redundancies policy, and they all used contracting out. Beyond this, there was no evidence of other differences in job security either at workplace level or with regard to individual perceptions. Therefore, although the analysis is based on only a small number of LBO workplaces, the overall pattern of findings does not indicate LBO workplaces had higher levels of job security pre-buyout, which the LBO subsequently reduced. As such, it is unlikely sample selection bias affects our results.

Second, given WERS 2011 is a survey of existing workplaces, we are unable to analyse whether LBOs lead to higher workplace closure rates. This is a significant caveat given this is a particularly severe form of job insecurity. However, firm-level quantitative analysis, controlling for debt ratios and other factors, shows LBOs are no more likely to fail than non-LBOs (Wilson and Wright 2013). Nevertheless, future analysis might usefully explore this matter further.

Third, there is no guarantee the findings would hold outside Britain, hence future studies might explore other national contexts. However, if LBOs do not increase job insecurity in Britain despite its liberal-market economy and limited statutory protection against job insecurity, it is unlikely that such effects will emerge in coordinated-market economies offering greater employment protection.

Fourth, focusing on job insecurity does not rule out other potential sources of value transfer from employees to investors of legitimate concern to regulators. These might include potential reductions in training, job quality or employee voice. Future studies might explore whether LBOs are associated with any of these negative outcomes.

Fifth, while our analysis shows the value of exploring the association between different LBO types and job insecurity, future studies might explore a range of further LBO types such as secondary buyouts (IUF/UITA/IUL 2007: 14), or ‘efficiency’ versus ‘failure’ buyouts (Wright *et al.* 2000).

Finally, although our findings offer little support for LBO critics, the analysis does not rule out the possibility of negative LBO spillover effects on job security in non-LBO firms. Similar job insecurity levels in LBOs and non-LBOs may reflect the market for corporate control, whereby the threat of being bought-out exerts downward pressure on labour costs in all firms. As such, LBOs may exert market discipline on senior executives in

non-LBOs, resulting in higher job insecurity in these firms as well as in LBOs. Future research might evaluate this spillover argument.

Despite these caveats, the findings presented here help develop understanding of the employment implications of LBOs. The findings suggest these implications appear benign where job security outcomes are concerned.

Acknowledgements

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Notes

1. LBOs in which PE firms: provide financial support to incumbent managers to purchase the firm (PE-backed management buyouts); buy a firm with a view to managing it directly; or provide financial backing to allow an external management team to purchase the firm.
2. LBOs in which a management team from outside the company purchases the firm with either PE or non-PE external finance. Managers coming in from outside would have some equity to align incentives (either direct equity holdings or stock options).
3. CMBOR lacks information on some LBOs' debt ratios, resulting in 86 LBO workplaces being dropped from our analysis.
4. Given missing data, 11 LBO workplaces are dropped from the analysis.
5. For details on the WERS sampling frame and the weights applied see <http://www.wers2011.info/methodology/4587717348>
6. For brevity, only the main study variable coefficients and standard errors are presented for each equation. Appendix Table 2 reports a full equation with coefficients and standard errors for both the main study variables and the control variables for equation 1 in Table 1.
7. WERS also asks management respondents whether, in the past two years, the establishment has undergone a management buy-out, buy-out by employees or acquisition by venture capital/PE. This question is problematic as it only asks about the past two years and conflates venture capital and PE. It also suffers potential measurement bias in assuming respondents (the most senior workplace manager responsible for employment relations issues) are reliable witnesses of corporate

ownership. We nevertheless used the WERS measure to provide a robustness check for the results presented in Table 1 by repeating the analysis using the WERS rather than the CMBOR measure. This analysis identified no systematic evidence to suggest poorer job security in LBOs than in non-LBOs, thereby further supporting the results in Table 1.

8. The analysis hereon includes both current and exited LBOs. However, as a sensitivity test we also re-estimated the equations excluding former LBOs. This was possible for PE-backed/ non-PE-backed LBOs and management buy-ins, but not for short/ long hold LBOs (as it is largely not possible to tell if an LBO is short/ long-hold until it has exited), or high/ low debt-ratio LBOs and perfect storm LBOs (due to insufficient observations). Nevertheless, the results for PE-backed/ non-PE-backed LBOs and management buy-ins were not qualitatively different from those in Tables 3 and 4. We also re-estimated the analysis excluding ‘distant’ LBOs that exited more than 6 years ago, but retaining ‘recent’ LBOs that exited within the previous six years. Although the number of observations was low in the high/ low-debt ratio and the perfect storm analysis, the results were not qualitatively different from Tables 3-7.
9. Of the 44 workplaces in the non-PE-backed LBO category, 12 are management buy-ins. The theoretical reasons why management buy-ins might negatively impact job security are similar to those for PE-backed LBOs. Hence, in estimating the difference between PE-backed and non-PE-backed LBOs, one must arguably exclude management buy-ins from the non-PE-backed LBO category. In re-estimating the equations accounting for this, the results were qualitatively unchanged from those in Table 3.
10. Of the 69 workplaces in the management buyout category, 37 are PE-backed. The theoretical reasons why PE-backed LBOs might negatively impact job security are similar to those for management buy-ins. Hence, in estimating the difference between management buyouts and management buy-ins, one must arguably drop PE-backed management buyouts from the management buyout category. In re-estimating the equations accounting for this, the results were qualitatively unchanged from those in Table 4.
11. Continuous data for buyout length are available in the CMBOR database. However, these data are converted into a categorical variable in the analysis in Table 5 to facilitate comparison against non-LBOs. As a robustness test we repeated the analysis using a continuous buyout length variable (excluding non-LBOs) to assess whether job security varies between longer/ shorter-hold LBOs. The results showed no consistent association between buyout length and job insecurity.
12. As we lack data on the debt ratios of all LBOs, this analysis is based on a restricted sample, thus explaining why all LBOs engaged in redundancy consultation here, but not in the analyses in Tables 1-5.
13. Continuous LBO debt ratio data are available in the CMBOR database. However, these data are converted into a categorical variable in the analysis in Table 6 to facilitate comparison against non-LBOs. A robustness test using a continuous debt ratio variable (excluding non-LBOs) revealed no consistent association between LBO debt ratio and job insecurity.
14. For example, although PSE (2007) reported initial employment decline in over half of LBOs assessed, inconsistent reporting makes it difficult to identify whether LBOs impact broader aspects of job insecurity negatively.

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Table 1: LBOs and job insecurity

	(1) Redundancy rate ¹	(2) Job security/ no-compulsory redundancies policy ²	(3) Redundancy consultation ²	(4) Redundancy consultation had positive impact ²
LBO	0.066 (0.349)	-0.374 (0.365)	-0.100 (0.472)	-0.263 (0.416)
F	4.32	3.31	1.68	1.70
Prob>F	0.000	0.000	0.008	0.005
N	1,534	1,559	468	430
	(5) Dismissal rate ¹	(6) Proportion of employees on temporary/ fixed-term contracts ¹	(7) Fixed-term workers doing work previously done by permanent employees ²	(8) Proportion of employees who are temporary agency staff ¹
LBO	-0.084 (0.409)	0.467 (0.378)	0.385 (0.358)	0.367 (0.576)
F	3.13	4.06	2.18	6.57
Prob>F	0.000	0.000	0.000	0.000
N	1,510	1,571	650	1,550
	(9) Agency staff doing work previously done by permanent employees ²	(10) Any contracting out ²	(11) Contracting out breadth ³	(12) Employee perceptions of job security ⁴
LBO	-0.377 (0.336)	-0.295 (0.244)	-0.237 (0.088)***	0.023 (0.058)
F	1.28	1.31	5.94	
Prob>F	0.121	0.089	0.000	
Wald chi2				640.54
Prob>chi2				0.000
Level 1				0.793
Level 2				0.157
N	440	1,571	1,571	9,883

Notes:

All private sector workplaces.

Coefficients given, standard errors in brackets.

*** $p < 0.01$.

All equations control for: organisation size; log of workplace size; single independent workplace; SIC major group; national ownership; workplace age; union recognition; proportion of workforce female, ethnic minority, aged 50+, part-time; proportion of workforce in each SOC major group.

Employee perceptions of job security also controls for respondent's: SOC major group; pay band; marital status; age; job tenure; highest qualification; part-time, temporary or fixed-term contract; union membership; ethnicity; gender; disability; dependent children.

¹ Fractional logit analysis.² Probit analysis.³ Poisson analysis.⁴ Multi-level OLS analysis.

Table 2: Job insecurity in current and exited LBOs

	(1) Redundancy rate ¹	(2) Job security/ no-compulsory redundancies policy ²	(3) Redundancy consultation ²	(4) Redundancy consultation had positive impact ²
<i>Reference category:</i>				
<i>Non-LBOs</i>				
Current LBOs	-0.495 (0.582)	-1.401 (0.443)***	0.007 (0.736)	-1.187 (0.502)**
Exited<6 years ago	0.057 (0.607)	-0.700 (0.537)	-0.806 (0.725)	-0.220 (0.747)
Exited≥6 years ago	0.478 (0.461)	0.053 (0.498)	(a)	0.382 (0.735)
F	4.35	3.19	1.65	1.72
Prob>F	0.000	0.000	0.010	0.004
N	1,534	1,559	448	430
	(5) Dismissal rate ¹	(6) Proportion of employees on temporary/ fixed-term contracts ¹	(7) Fixed-term workers doing work previously done by permanent employees ²	(8) Proportion of employees who are temporary agency staff ¹
<i>Reference category:</i>				
<i>Non-LBOs</i>				
Current LBOs	-0.212 (0.568)	0.496 (0.518)	-0.918 (0.485)*	1.039 (0.730)
Exited<6 years ago	-0.168 (1.009)	0.367 (1.138)	0.409 (0.454)	0.015 (0.670)
Exited≥6 years ago	0.197 (0.554)	0.480 (0.631)	1.715 (0.402)***	-1.010 (0.588)*
F	3.11	3.91	2.38	6.69
Prob>F	0.000	0.000	0.000	0.000
N	1,510	1,571	650	1,550
	(9) Agency staff doing work previously done by permanent employees ²	(10) Any contracting out ²	(11) Contracting out breadth ³	(12) Employee perceptions of job security ⁴
<i>Reference category:</i>				
<i>Non-LBOs</i>				
Current LBOs	-1.295 (0.492)***	-0.258 (0.333)	-0.373 (0.126)***	0.071 (0.077)
Exited<6 years ago	0.217 (0.590)	-0.422 (0.476)	-0.004 (0.144)	-0.099 (0.109)
Exited≥6 years ago	0.363 (0.627)	-0.272 (0.345)	-0.210 (0.144)	0.084 (0.096)
F	1.36	1.29	5.69	
Prob>F	0.066	0.098	0.000	
Wald chi2				644.41
Prob>chi2				0.000
Level 1				0.793
Level 2				0.156
N	440	1,571	1,571	9,883

Notes:

All private sector workplaces.

Coefficients given, standard errors in brackets.

*p<0.10. **p<0.05. ***p<0.01.

Controls as Table 1.

(a) all workplaces engaged in redundancy consultation.

¹ Fractional logit analysis.

² Probit analysis.

³ Poisson analysis.

⁴ Multi-level OLS analysis.

Table 3: Job insecurity in PE-backed and non-PE-backed LBOs

	(1) Redundancy rate ¹	(2) Job security/ no-compulsory redundancies policy ²	(3) Redundancy consultation ²	(4) Redundancy consultation had positive impact ²
<i>Reference category:</i>				
<i>PE-backed LBO</i>				
Non-PE-backed LBO	0.040 (0.613)	-0.535 (0.622)	-1.249 (0.895)	-0.478 (0.594)
Non-LBO	-0.059 (0.391)	0.294 (0.398)	-0.533 (0.719)	0.152 (0.516)
F	4.14	3.25	1.63	1.64
Prob>F	0.000	0.000	0.012	0.008
N	1,534	1,559	468	430
	(5) Dismissal rate ¹	(6) Proportion of employees on temporary/ fixed-term contracts ¹	(7) Fixed-term workers doing work previously done by permanent employees ²	(8) Proportion of employees who are temporary agency staff ¹
<i>Reference category:</i>				
<i>PE-backed LBO</i>				
Non-PE-backed LBO	0.355 (0.704)	0.828 (0.795)	0.583 (0.588)	-0.212 (0.994)
Non-LBO	0.171 (0.503)	-0.257 (0.420)	-0.207 (0.418)	-0.423 (0.751)
F	3.17	4.12	2.20	6.58
Prob>F	0.000	0.000	0.000	0.000
N	1,510	1,571	650	1,550
	(9) Agency staff doing work previously done by permanent employees ²	(10) Any contracting out ²	(11) Contracting out breadth ³	(12) Employee perceptions of job security ⁴
<i>Reference category:</i>				
<i>PE-backed LBO</i>				
Non-PE-backed LBO	0.671 (0.630)	-0.793 (0.470)*	-0.161 (0.187)	-0.190 (0.115)*
Non-LBO	0.599 (0.426)	0.095 (0.270)	0.204 (0.097)**	-0.078 (0.066)
F	1.29	1.38	5.85	
Prob>F	0.107	0.056	0.000	
Wald chi2				640.19
Prob>chi2				0.000
Level 1				0.793
Level 2				0.156
N	440	1,571	1,571	9,883

Notes:

All private sector workplaces.

Coefficients given, standard errors in brackets.

*p<0.10. **p<0.05.

Controls as Table 1.

¹ Fractional logit analysis.² Probit analysis.³ Poisson analysis.⁴ Multi-level OLS analysis.

Table 4: Job insecurity in management buy-ins and management buyouts

	(1) Redundancy rate ¹	(2) Job security/ no-compulsory redundancies policy ²	(3) Redundancy consultation ²	(4) Redundancy consultation had positive impact ²
<i>Reference category: Management buy-in</i>				
Management buyout	1.404 (0.785)*	1.340 (0.597)**	0.616 (1.082)	0.753 (0.733)
Non-LBO	0.701 (0.674)	0.950 (0.312)***	0.568 (0.928)	0.731 (0.570)
F	4.65	3.37	1.67	1.70
Prob>F	0.000	0.000	0.008	0.005
N	1,534	1,559	468	430
	(5) Dismissal rate ¹	(6) Proportion of employees on temporary/ fixed-term contracts ¹	(7) Fixed-term workers doing work previously done by permanent employees ²	(8) Proportion of employees who are temporary agency staff ¹
<i>Reference category: Management buy-in</i>				
Management buyout	1.527 (0.746)**	-0.678 (1.040)	-0.078 (0.602)	-0.392 (0.901)
Non-LBO	0.681 (0.586)	-0.644 (0.419)	-0.412 (0.456)	-0.501 (0.762)
F	3.20	4.06	2.14	6.62
Prob>F	0.000	0.000	0.000	0.000
N	1,510	1,571	650	1,550
	(9) Agency staff doing work previously done by permanent employees ²	(10) Any contracting out ²	(11) Contracting out breadth ³	(12) Employee perceptions of job security ⁴
<i>Reference category: Management buy-in</i>				
Management buyout	1.401 (0.685)**	-0.415 (0.448)	0.143 (0.168)	-0.172 (0.101)*
Non-LBO	1.243 (0.635)*	0.182 (0.274)	0.283 (0.110)**	-0.111 (0.078)
F	1.35	1.34	5.83	
Prob>F	0.072	0.071	0.000	
Wald chi2				648.02
Prob>chi2				0.000
Level 1				0.793
Level 2				0.156
N	440	1,571	1,571	9,883

Notes:

All private sector workplaces.

Coefficients given, standard errors in brackets.

*p<0.10. **p<0.05. ***p<0.01.

Controls as Table 1.

¹ Fractional logit analysis.² Probit analysis.³ Poisson analysis.⁴ Multi-level OLS analysis.

Table 5: Job insecurity in short and long hold LBOs

	(1) Redundancy rate ¹	(2) Job security/ no-compulsory redundancies policy ²	(3) Redundancy consultation ²	(4) Redundancy consultation had positive impact ²
<i>Reference category:</i>				
<i>Short-hold LBO^a</i>				
Long-hold LBO ^b	0.362 (0.666)	-1.185 (0.555)**	1.660 (0.935)*	1.158 (0.770)
Non-LBO	0.166 (0.594)	0.135 (0.419)	1.313 (0.740)*	1.022 (0.619)*
F	4.27	3.25	1.68	1.70
Prob>F	0.000	0.000	0.008	0.005
N	1,534	1,559	468	430
	(5) Dismissal rate ¹	(6) Proportion of employees on temporary/ fixed-term contracts ¹	(7) Fixed-term workers doing work previously done by permanent employees ²	(8) Proportion of employees who are temporary agency staff ¹
<i>Reference category:</i>				
<i>Short-hold LBO</i>				
Long-hold LBO	-0.825 (0.695)	0.557 (0.789)	-1.627 (0.555)***	2.017 (0.795)***
Non-LBO	-0.356 (0.557)	-0.091 (0.639)	-1.373 (0.424)***	1.131 (0.550)**
F	3.07	3.99	2.31	6.78
Prob>F	0.000	0.000	0.000	0.000
N	1,510	1,571	650	1,550
	(9) Agency staff doing work previously done by permanent employees ²	(10) Any contracting out ²	(11) Contracting out breadth ³	(12) Employee perceptions of job security ⁴
<i>Reference category:</i>				
<i>Short-hold LBO</i>				
Long-hold LBO	-0.441 (0.720)	-0.645 (0.389)*	-0.193 (0.163)	-0.068 (0.112)
Non-LBO	0.068 (0.610)	-0.110 (0.283)	0.130 (0.108)	-0.064 (0.096)
F	1.25	1.38	5.78	
Prob>F	0.141	0.054	0.000	
Wald chi2				646.67
Prob>chi2				0.000
Level 1				0.793
Level 2				0.157
N	440	1,571	1,571	9,883

Notes:

All private sector workplaces.

Coefficients given, standard errors in brackets.

*p<0.10. **p<0.05. ***p<0.01.

Controls as Table 1.

^a Short-hold LBO (0 to <4 years)^b Long-hold LBO (4 years+)¹ Fractional logit analysis.² Probit analysis.³ Poisson analysis.⁴ Multi-level OLS analysis.

Table 6: Job insecurity in high and low debt ratio LBOs

	(1) Redundancy rate ¹	(2) Job security/ no-compulsory redundancies policy ²	(3) Redundancy consultation ²	(4) Redundancy consultation had positive impact ²
<i>Reference category:</i>				
<i>High-debt ratio LBO^a</i>				
Low-debt ratio LBO ^b	-0.405 (1.002)	1.870 (0.727)**	(a)	-2.759 (1.134)**
Non-LBO	-0.011 (0.608)	0.957 (0.421)**		-1.673 (0.970)*
F	3.74	3.40		1.61
Prob>F	0.000	0.000		0.011
N	1,451	1,474		401
	(5) Dismissal rate ¹	(6) Proportion of employees on temporary/ fixed-term contracts ¹	(7) Fixed-term workers doing work previously done by permanent employees ²	(8) Proportion of employees who are temporary agency staff ¹
<i>Reference category:</i>				
<i>High-debt ratio LBO</i>				
Low-debt ratio LBO	-0.079 (1.024)	1.564 (1.364)	1.513 (0.918)	-0.525 (0.970)
Non-LBO	-0.485 (0.622)	0.566 (0.702)	-0.917 (0.602)	1.218 (0.755)
F	2.78	4.49	2.14	8.37
Prob>F	0.000	0.000	0.000	0.000
N	1,427	1,485	611	1,464
	(9) Agency staff doing work previously done by permanent employees ²	(10) Any contracting out ²	(11) Contracting out breadth ³	(12) Employee perceptions of job security ⁴
<i>Reference category:</i>				
<i>High-debt ratio LBO</i>				
Low-debt ratio LBO	0.584 (0.978)	-0.919 (0.569)	-0.257 (0.252)	-0.259 (0.222)
Non-LBO	-0.021 (0.719)	-0.272 (0.374)	0.163 (0.113)	-0.231 (0.076)***
F	1.42	1.42	5.28	
Prob>F	0.046	0.044	0.000	
Wald chi2				665.80
Prob>chi2				0.000
Level 1				0.791
Level 2				0.155
N	405	1,486	1,486	9,313

Notes:

All private sector workplaces.

Coefficients given, standard errors in brackets.

*p<0.10. **p<0.05. ***p<0.01.

Controls as Table 1.

(a) All LBOs (and 84% of non-LBOs) engaged in redundancy consultation.

^a Debt ratio <50%

^b Debt ratio ≥50%

¹ Fractional logit analysis.

² Probit analysis.

³ Poisson analysis.

⁴ Multi-level OLS analysis.

Table 7: Job insecurity in perfect storm LBOs

	(1) Redundancy rate ¹	(2) Job security/ no-compulsory redundancies policy ²	(3) Redundancy consultation ²	(4) Redundancy consultation had positive impact ²
<i>Reference category:</i>	(a)		(a)	(a)
<i>Perfect storm LBO</i>				
Non-perfect storm LBO		0.746 (0.627)		
Non-LBO		0.946 (0.511)*		
F		3.29		
Prob>F		0.000		
N		1,548		
	(5) Dismissal rate ¹	(6) Proportion of employees on temporary/ fixed-term contracts ¹	(7) Fixed-term workers doing work previously done by permanent employees ²	(8) Proportion of employees who are temporary agency staff ¹
<i>Reference category:</i>				
<i>Perfect storm LBO</i>				
Non-perfect storm LBO	-0.381 (0.897)	0.811 (0.988)	-0.078 (0.773)	1.104 (1.122)
Non-LBO	-0.255 (0.810)	0.219 (0.898)	-0.445 (0.715)	0.603 (0.953)
F	3.16	4.04	2.14	6.54
Prob>F	0.000	0.000	0.000	0.000
N	1,499	1,560	646	1,539
	(9) Agency staff doing work previously done by permanent employees ²	(10) Any contracting out ²	(11) Contracting out breadth ³	(12) Employee perceptions of job security ⁴
<i>Reference category:</i>				
<i>Perfect storm LBO</i>				
Non-perfect storm LBO	1.509 (0.795)*	-0.925 (0.459)**	-0.090 (0.174)	-0.353 (0.099)***
Non-LBO	1.874 (0.750)**	-0.461 (0.419)	0.211 (0.148)	-0.340 (0.088)***
F	1.32	1.43	5.79	
Prob>F	0.091	0.040	0.000	
Wald chi2				662.17
Prob>chi2				0.000
N	438	1,560	1,560	9,789
Level 1				0.794
Level 2				0.154

Notes:

All private sector workplaces.

Coefficients given, standard errors in brackets.

*p<0.10. **p<0.05. ***p<0.01.

Controls as Table 1.

(a) No redundancies in any perfect storm LBOs.

¹ Fractional logit analysis.

² Probit analysis.

³ Poisson analysis

⁴ Multi-level OLS analysis.

Appendix Table 1: Variable means

	Mean
Dependent variables	
Dismissal rate	0.017
Redundancy rate	0.015
Job security/ no-compulsory redundancies policy	0.047
Redundancy consultation	0.842
Positive change resulting from redundancy consultation	0.381
Proportion of workforce on fixed-term contracts	0.064
Fixed-term workers doing work previously done by permanent employees	0.373
Proportion of employees who are temporary agency staff	0.012
Agency staff doing work previously done by permanent employees	0.434
Any contracting out	0.857
Number of activities contracted out (0-11)	2.928
I feel my job is secure in this workplace (employee survey) (1=strongly disagree, 5=strongly agree)	3.587
Independent variables	
LBO	0.078
Current LBO	0.046
Exited<6 years ago	0.014
Exited≥6 years ago	0.018
PE-backed LBO	0.063
Non-PE-backed LBO	0.015
Management buy-in	0.060
Management buyout	0.018
Short-hold LBO (0 to <4 years)	0.033
Long-hold LBO (≥4 years)	0.046
Low-debt LBO (Debt ratio <50%)	0.010
High-debt LBO (Debt ratio ≥50%)	0.023
Perfect storm LBO	0.015
Non-perfect storm LBO	0.060
Control variables	
Organisation size (employees)	
5-49	0.560
50-249	0.122
250-499	0.033
500-999	0.039
1,000-4,999	0.104
5,000-9,999	0.058
10,000+	0.084
Log of workplace size (mean workplace size: 26.459)	2.600
Single independent workplace	0.485
SIC Major group	
Manufacturing	0.103
Electricity, gas, steam, and air conditioning supply	0.001
Water supply; sewerage, waste management and remediation activities	0.004
Construction	0.061
Wholesale and retail trade; repair of motor vehicles and motorcycles	0.276
Accommodation and food service activities	0.030
Transport and storage	0.098
Information and communication	0.040
Financial and insurance activities	0.014
Real estate activities	0.034

Professional, scientific and technical activities	0.092
Administrative and support service activities	0.065
Public administration and defence; compulsory social security/ Education	0.037
Human health and social work activities	0.096
Arts, entertainment and recreation	0.020
Other service activities	0.029
National ownership	
UK	0.929
North American	0.025
Other European Union	0.034
Rest of World	0.012
Workplace Age (years)	
0 to <5	0.106
5 to <10	0.222
10 to <20	0.274
20+	0.398
Union recognition	0.117
Proportion of workforce:	
Female	0.502
Ethnic minority	0.069
Aged 50+	0.234
Part-time	0.294
Proportion of workforce in SOC major group	
Managers and senior officials	0.189
Professionals	0.087
Associate professional/ technical occupations	0.085
Administrative and secretarial occupations	0.117
Skilled trades occupations	0.091
Caring, leisure and other personal service occupations	0.080
Sales and customer service occupations	0.179
Process, plant, and machine operatives and drivers	0.065
Routine occupations	0.105
Additional controls for individual level analysis	
Respondent's SOC major group	
Manager or senior official	0.097
Professional	0.157
Associate professional or technical	0.174
Administrative and secretarial	0.156
Skilled trades	0.085
Caring, leisure and other personal service	0.061
Sales and customer service	0.085
Process, plant and machine operatives and drivers	0.082
Routine occupations	0.104
Pay band (per week)	
£60 or less	0.025
£61-£100	0.037
£101-£130	0.033
£131-£170	0.041
£171-£220	0.060
£221-£260	0.067
£261-£310	0.089
£311-£370	0.103
£371-£430	0.106
£431-£520	0.114
£521-£650	0.110
£651-£820	0.088

£821-£1,050	0.058
£1,051+	0.071
Marital status	
Single	0.249
Married	0.677
Divorced/ separated/ widowed	0.073
Respondent age (years)	
16-21	0.053
22-29	0.197
30-39	0.231
40-49	0.247
50-59	0.198
60-65	0.053
65+	0.021
Respondent's tenure (years)	
<1	0.142
1 to <2	0.117
2 to <5	0.262
5 to <10	0.243
10+	0.236
Highest academic qualification	
None	0.077
Other	0.022
GCSE grade D-G	0.055
GCSE grade A-C	0.192
A-level	0.243
Degree	0.313
Higher degree	0.098
Part-time	0.250
Temporary/ fixed-term contract	0.063
Union member	0.188
Ethnicity	
White	0.917
Mixed	0.014
Asian or Asian British	0.041
Black	0.019
Other	0.010
Female	0.468
Disabled	0.080
Respondent has dependent child	0.350

Appendix Table 2: Redundancy rates in LBOs full equation (Table 1, equation 1)

	Redundancy rate	
	Coeff.	Std. error
LBO	0.066	(0.349)
Organisation size (employees) (reference category: 5-49)		
50-249	0.253	(0.450)
250-499	-0.413	(0.624)
500-999	0.644	(0.658)
1,000-4,999	-0.104	(0.588)
5,000-9,999	-0.621	(0.871)
10,000+	-0.109	(0.754)
Log of workplace size	0.022	(0.104)
Single independent workplace	0.251	(0.482)
SIC Major Group (reference category: manufacturing)		
Electricity, gas, steam, and air conditioning supply	-0.772	(0.783)
Water supply; sewerage, waste management and remediation activities	-1.180	(0.998)
Construction	0.853	(0.537)
Wholesale and retail trade; repair of motor vehicles and motorcycles	0.149	(0.565)
Accommodation and food service activities	-0.434	(0.754)
Transport and storage	0.538	(0.798)
Information and communication	0.535	(0.578)
Financial and insurance activities	0.447	(0.655)
Real estate activities	0.072	(0.640)
Professional, scientific and technical activities	1.174**	(0.465)
Administrative and support service activities	-1.416**	(0.668)
Public administration and defence; compulsory social security/ Education	2.738***	(0.591)
Human health and social work activities	0.316	(0.590)
Arts, entertainment and recreation	0.290	(0.693)
Other service activities	1.006	(0.637)
National Ownership (reference category: UK-owned)		
North American	1.690***	(0.419)
Other European Union	-0.479	(0.605)
Rest of World	0.802	(0.605)
Workplace age (years) (reference category: 0 to <5)		
5 to <10	0.923*	(0.515)
10 to <20	1.158**	(0.521)
20+	0.672	(0.510)
Union recognition	0.918***	(0.344)
Proportion of the workforce:		
Female	-0.815	(0.531)
Ethnic minority	1.088*	(0.604)
Aged 50+	0.886	(0.607)
Part-time	-1.257**	(0.580)
Professionals	-1.809*	(1.065)
Associate professional/ technical occupations	-0.163	(1.010)
Administrative and secretarial occupations	-0.186	(1.080)
Skilled trades occupations	-0.532	(1.001)
Caring, leisure and other personal service occupations	-2.028*	(1.190)
Sales and customer service occupations	-1.240	(0.969)
Process, plant, and machine operatives and drivers	-1.647	(1.057)
Routine occupations	-0.885	(1.102)
F		4.32
Prob>F		0.000
N		1,534

Fractional logit analysis

Coefficients given, standard errors in brackets.

*p<0.10. **p<0.05. ***p<0.01.