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Employment change after takeovers: the role of executive ownership

Abstract

The paper examines the impact of executive ownership and other ownership and governance factors on employment change after takeovers. Drawing on a dataset of 235 takeovers, the results show that there is a reduction in employment in just over half of cases. Higher levels of executive share ownership are associated with lower probabilities of employee lay-offs post-takeover, and there is a positive relationship between executive ownership and employment growth. The effect of executive options on employment change is generally insignificant, as are the effects of other features of ownership and governance. The evidence suggests that executives with higher levels of ownership tend to mount takeovers of better performing firms and to implement takeovers aimed at growth.

1 Introduction

Mergers and acquisitions (M&A) are controversial because of their perceived adverse effects on employment. These transactions are often followed by restructuring, divestments, and plant shutdowns, leading to lay-offs and reductions in employment (Conyon *et al.* 2001; 2002a; Lehto and Böckerman 2008). They can have catastrophic consequences for workers, especially when large-scale reductions occur in localities where alternative employment opportunities are limited. Equally, there is some evidence of employment growth after takeovers, especially when divestments (job transfers) are taken out of the equation (Denis 1994). A key question concerns the factors associated with employment change after M&A. Why do some transactions result in declines in employment whilst others are followed by employment growth?

The role of executive ownership and other ownership and governance factors in explaining these outcomes is tested and evaluated in this paper. Recent Industrial Relations literature has suggested that corporate governance and ownership can have a substantial impact on the labour effects of mergers and acquisitions and their aftermath (Gospel and Pendleton 2003; Armour *et al.* 2003). But as yet there has been little empirical scrutiny of this particular issue though there has been a long tradition of research into the employment effects of M & A (Brown and Medoff 1988; Shleifer and Summers 1988; Conyon *et al.* 2002a).

Ownership and governance can be predicted to have various effects on employment change after takeovers. The significance of executive ownership is that it potentially aligns executive interests with those of shareholders. High levels of executive ownership could be associated with employment reductions after takeovers because a stake in the results of the post-merger company provides an incentive to recoup takeover costs by reducing employment costs. A further possibility is that executive ownership will lead to employment reductions in certain circumstances such as where the target company has had poor performance prior to the takeover. Alternatively, executive ownership could be associated with employment growth because ownership can provide an incentive to grow the firm. It is possible that executives with ownership mount takeovers where there are perceived to be good growth prospects. Equally, they may avoid takeovers aimed at rationalisation and restructuring because of the potential risk to their wealth should rationalisation not succeed. In other words, loss aversion influences the kind of takeovers that are mounted by executives with ownership, and this impacts upon the level of employment after the takeover. A rather different argument for predicting employment stability or growth after takeovers is that executive ownership entrenches managerial control, with executives using this protection from shareholders to build alliances with labour and to pursue empire-building strategies.

Executive share options may have the opposite effect in so far as they provide a right to future returns but not current control rights, and have no downside risk. They may encourage managers to embark on high risk strategies such as large-scale rationalisation and restructuring, leading to substantial contraction of employment. As for other shareholders, a single large bloc-holder may be unlikely to seek employment reductions because, in so far as a large bloc holder is an 'insider', there may be a greater appreciation of the value of human capital and close

relationships with other insiders (Jackson 2005: van Essen *et al.* 2012). A large bloc holder may also secure private benefits from controlling a larger and growing firm (Barclay and Holderness, 1989). Where there are several large shareholders a greater focus on shareholder wealth might be anticipated, and this might be associated with employment reductions to recoup the cost of the takeover (Shleifer and Vishny, 1986).

In the paper we empirically examine the relationship between ownership and employment change after mergers and acquisitions, focusing especially on the impact of executive ownership. It is based on a study of 235 takeovers amongst British listed companies taking place between 1990 and 2000, supplemented by data drawn from a control sample of 470 non-merging firms, matched by industry, size and pre-takeover performance (Barber and Lyon 1996; Loughran and Ritter 1997). The paper examines the factors associated with employment growth and decline within one and three years of the transaction and with lay-off announcements. In the first place the results show that employment reductions are far from universal. By the end of the first year after the transaction, there is an average reduction of employment of 2.6 per cent per company, with a reduction occurring in 54 per cent of cases. Employment reductions are concentrated in merged companies that divest some operations after the takeover: when companies making divestments are excluded, there is average employment growth of 4 per cent after one year (c.f. Denis 1994). Lay-offs are announced in the first year post-takeover in 43 per cent of cases (28 per cent when divestment cases are excluded) but in 12 per cent of these lay-off effects are counter-balanced by employment growth.

Our main finding is that executive share ownership is a significant influence on post-transaction employment change. Higher levels of executive ownership are associated with lower probabilities of lay-offs. There are positive and sizeable relationships between executive ownership and employment change. These results hold whether or not we include cases where divestments take place. The effects of options and ownership by other bloc holders are far less strong. Although the results are often in the direction predicted, the coefficients are insignificant in nearly all instances.

Since the effects of executive ownership are so pronounced, further analysis in the paper mainly concentrates on this form of ownership. We examine whether the relationship between

executive ownership and employment change is curvilinear, based on the findings in the literature that ownership has strong non-linear effects on performance (Bos *et al.* 2012; Cosh *et al.* 2006; Morck *et al.* 1988; Short and Keasey 1999). We find little evidence to support this perspective in the case of employment change: the relationship is broadly linear throughout the distribution of executive ownership.

We further consider whether the effects of managerial ownership are moderated by the context and various features of the takeover. In some circumstances, managerial ownership might be anticipated to have positive effects whereas in others the incentives effects of ownership might lead to negative effects on employment. We find little evidence to support this as most interaction terms are insignificant. The exceptions are significant interactions with takeover premia, the relative size of target companies, and diversification takeovers. We attribute these findings to selection effects.

A key question concerns the reasons for the consistently positive relationship between executive ownership and employment change. One possibility is that increasing ownership insulates top managers from shareholders and enables them to create 'insider alliances' with workers. Whilst we cannot rule out alliances of this sort, there is little evidence to suggest that entrenchment is an important explanation for our findings. The signs on the coefficients of the other ownership variables are typically the same as the executive ownership coefficients. Another possibility is that executives with ownership incentives mount takeovers that are more likely to lead to employment growth. We find stronger evidence in support of this selection argument. Executive owners mount takeovers of firms with better relative labour productivity, and tend to mount takeovers aimed at growth rather than rationalisation. We attribute this to risk aversion. As undiversified investors with wealth at risk, executives seek to avoid those takeovers that may adversely affect their wealth.

To the best of our knowledge, these results for ownership and governance are novel: we are unaware of any previous studies on the effects of ownership and options on employment in the UK after takeovers. They refine our understanding of the employment effects of takeovers, and highlight factors that are associated with job loss and growth. They counter the view that use of instruments that are said to align managers with shareholder interests will typically have

negative impacts on labour. The significance for policy and practice of our results is that as ownership by executives is increasingly promoted in the UK, in place of other instruments such as stock options, the effects of takeovers may come to have more benign effects on labour in the longer term. In the context of the current policy debate in the UK about takeover regulation, our evidence is consistent with the view that further regulation may not be necessary to protect labour's interests, at least as far as takeovers by UK listed firms are concerned.

In the next section we provide background material on the role of ownership and governance in influencing employment change after takeovers. We then outline the data sources and variables, and then present the results of multivariate analysis. In the final section we consider the implications of the findings and the limitations of our approach.

2 Background: theory and evidence

There is an extensive literature on the employment effects of takeovers in the USA and the UK, reflecting the large relative size of the listed company sector in these countries and an accompanying high level of M&A involving large firms (Rossi and Volpin 2004). The evidence suggests that employment reductions often follow M&A (Deakin and Slinger 1997; Lehto and Böckerman 2008), though it is not always clear whether this arises from job transfers or job destruction. There is a wide variety of explanations for post-takeover employee layoffs and employment reduction after takeovers in the literature. One influential view suggests that acquirers target under-performing firms so as to reallocate resources to more efficient users (Manne 1965). Restructuring is therefore likely to occur after takeovers. On this basis the performance of target companies prior to takeover is expected to predict employment reductions after the transaction, and there is certainly supportive evidence (Hillier *et al.* 2007; Coucke *et al.* 2007; O'Shaughnessy and Flanagan 1997; Krishnan *et* al 2007). Other studies highlight the extent of similarity between target and acquirer. Where related businesses are acquired, there appears to be scope for rationalisation of duplicated activities. Relatedness has predicted lay-off announcements post-takeover (O'Shaughnessy and Flanagan 1998), workforce reductions (Krishnan *et al* 2007), and reductions in labour demand (Conyon *et al.* 2002a, 2002b; Gugler and

Yurtoglu 2004). Hostile takeovers also commonly lead to employment reductions (Denis 1994), often because they are aimed at major restructuring of target companies and because high premiums are necessary to buy-off target company shareholders (Sudansanam and Mahate 2006; Goergen and Renneboog 2004). They have been said to lead to a 'breach of trust', whereby implicit contracts between companies and workers are broken (Shleifer and Summers 1988).

The role of ownership incentives in influencing employment change after takeovers has rarely been empirically investigated despite the central role of these incentives in corporate governance theory over many years (Filatotchev *et al.* 2000). Agency and managerialist theories have argued that top managers without ownership will seek to grow their firms beyond the optimum size for shareholders, incentivized by wages, perks, and desire for status that are primarily linked to organizational size (Jensen 1986; Jensen and Meckling 1976; Marris 1964). A central claim is that managers will embark on mergers and acquisitions to expand their empires (Jensen and Murphy 1990). Having acquired new companies, these managers will resist downsizing and restructuring (Dial and Murphy 1995).

Providing managers with ownership is predicted to align their incentives with shareholders and to limit self-serving behavior. Managerial ownership may have a number of effects on takeovers and employment. It may make managers less enthusiastic to mount takeovers in the first place on the grounds that takeovers are thought to be value-destroying. There is some evidence from the US to support this argument (Sanders 2001). Ownership may also lead managers to mount takeovers with certain characteristics. Executives with an ownership stake may take-over better performing companies or those with better growth prospects rather than those that require extensive restructuring.

Once takeovers have taken place, the effects of managerial ownership on employment can have contradictory effects. On the one hand, managerial owners may embark on employment-reducing rationalization with a view to enhancing shareholder wealth. They may seek to recoup the costs of the takeover by in effect transferring them to labour. Krishnan *et* al (2007) found that the premia paid to mount takeovers is the main predictor of employment reductions post-takeover, and it could be predicted that executives with ownership will be especially concerned to recoup these costs. On the other hand, ownership provides managers

with an incentive to grow the firm so as to benefit from increases in value. They will also seek to avoid value loss, and this may weigh more heavily than the possibility of securing gains (Kahneman and Tversky 1979), especially as executives are typically undiversified investors with their human capital highly correlated with their ownership wealth. Given that lay-offs and employment contractions are known to have negative impacts on share price in many circumstances (Datta *et al.* 2010), executives with ownership will usually avoid actions that lead to lay-offs and employment reductions. Indeed, asymmetric risk aversion may mean that executives with ownership will mount takeovers of firms that are seen to be a less risky prospect (eg. they are better performers and/or do not require extensive rationalization).

A further possibility is that the control rights associated with executive ownership may protect managers against shareholder discipline. These entrenched managers use their power to secure 'private' benefits, such as various perks, which are typically associated with organizational size. They may also choose to side with workers as fellow 'insiders'. A more complex prediction is that ownership effects are non-linear. The performance literature has drawn attention to opposing effects of alignment and entrenchment arising from ownership (Morck *et al.* 1989; Short and Keasey 1999; Cosh *et al.* 2006). At low levels of executive ownership, return rights are likely to predominate as control rights relative to other shareholders will be low, and thus alignment effects will be strong. As the level of ownership increases, there will be diminishing returns whilst control rights will become more potent. Thus, entrenchment effects may come to predominate, with managers able to use their control rights to protect 'private interests', such as a 'quiet life' characterized by harmonious relationships with labour. There is ample evidence from the performance literature that managerial ownership has non-linear effects (Cosh *et al.* 2006). There is also some evidence from the labour literature: Cronqvist *et al.* (2009) find that managers with substantial control rights pay higher wages but that this is mitigated by return rights, whilst Filatotchev *et al.* (2000) find evidence of non-linear effects of managerial ownership on post-privatization downsizing in former Soviet countries. The implication in the current context is that at low levels of ownership managers may be more likely to instigate lay-offs and reduce employment if required but that at higher levels they will be less likely to reduce employment.

Stock options may have rather different effects on lay-offs and employment reductions post-takeover (Sanders 2001). There are two reasons for this. One is that options do not provide control or returns during the vesting and exercise period. During this period managerial attention is likely to focus on the potential return rights attainable at maturity and exercise. For this reason the entrenchment effects of options are likely to be minimal. The second reason is that the risk properties of options are very different from those of share ownership. Options protect their holders from downside risk, and for this reason are likely to encourage them to take riskier actions. This might take the form of larger bets with higher variance (Sanders and Hambrick 2007). In the context of takeovers there are several implications. First, executives with options may be more likely to mount high risk actions such as takeovers in the first place, as is borne out by US evidence (Sanders 2001). It may also encourage them to embark on riskier takeovers or to adopt risker strategies during takeovers (Tufano 1996). Post-takeover, options may encourage holders to reduce employment so as to recoup the costs of takeovers and enhance shareholder wealth, even though there may be a high risk that these actions will have adverse consequences on the share price. An important consideration here is that negative share price returns will be concentrated in the period immediately around the employment reductions or lay-offs whilst the options may not be exercisable until some point further in the future. Thus, option holders will not suffer immediate reductions in their wealth, unlike shareholders.

Although stock ownership and options are often seen as the most effective way of reducing the agency costs arising from the separation of ownership and control (Hall and Liebman 1998), there are other means of encouraging managers to operate in shareholders' interests. The presence of non-executive directors provides for the articulation of shareholder interests in the boardroom, especially where these directors are clearly independent of the firm and its management (Perry and Shivdasani, 2005). Corporate governance reforms over a twenty year period in the UK have given a primary role in corporate governance to non-executive directors, and over time their position and numbers (as a proportion of the total board) have been enhanced. However, evidence on their effectiveness is inconclusive (Denis and McConnell 2003; Hermalin and Weisbach, 2003; Bebchuk and Weisbach 2010), though higher proportions of non-executives have been found to be more effective (Mura 2007). How the presence of non-executives should impact upon employment change or stability after takeovers is not obvious.

The extant evidence (Krishnan *et al.* 2007) shows that the proportion of non-executives is an insignificant predictor of post-takeover workforce reductions.

Substantial shareholders may also influence employment change after takeovers. The norm in countries with 'liberal market' systems of corporate governance, such as Britain, is for shareholdings in large listed companies to be small and widely dispersed. Consequently, the norm has been that most institutional shareholders (typically the largest shareholders in the larger firms) do not play an active role in governance (Gillan and Starks 2007; Bebchuk and Weisbach 2010), though there is evidence of 'behind the scenes' informal contact with company managers (Black and Coffee 1994). However, larger shareholders have a greater incentive and capacity to influence management decisions. Where there is a large bloc-holder it might be anticipated that employment reductions are less likely because, in so far as a large bloc holder is an 'insider', there may be a greater appreciation of the value of human capital and good relationships with employees (Jackson 2005) and because a large bloc holder may also secure private benefits from controlling a larger and growing firm (Barclay and Holderness, 1989). By contrast, where there are several large shareholders a greater focus on shareholder wealth might be anticipated, and this might be associated with employment reductions to recoup the cost of the takeover. However, extant evidence suggests that institutional ownership has insignificant effects on downsizing (Filatotchev *et al.* 2000). One possibility is that selection effects are important: larger shareholders are able to prevent managers mounting takeovers that might subsequently lead to lay-offs and contraction.

In the remainder of the paper we assess the role of ownership and governance in influencing lay-offs and changes in employment at company level after takeovers. Using a sample of UK takeovers, we examine both lay-off announcements and actual employment change at one and three years after the transaction. Several questions are addressed, based on the preceding discussion of the literature. One, what are the employment outcomes of takeovers? Two, what effects do executive ownership, executive options, and other forms of substantial ownership have on lay-offs and employment? Three, to what extent does executive ownership have linear effects on employment after takeovers? Four, are the effects of executive ownership moderated by circumstances and characteristics of the takeover? Five, do executive and other forms of ownership influence the type of takeovers that are mounted?

To address these questions the following analyses are conducted: first, probit estimations of the probability of lay-offs; second, OLS analysis of the relationship between the various explanatory factors and employment change, both positive and negative. Tests are conducted for the potential non-linear effects of ownership. To highlight the potentially asymmetric effects on employment growth and decline, the sample is split into workforce growth and reduction sub-samples in parts of the analysis. Finally, we conduct a further series of regressions to assess whether ownership effects are contingent on various aspects of the takeover transaction and pre-takeover performance, and also to evaluate whether selection effects have a role in explaining the results observed.

3 Research methods

Sample

The initial population for the study is all takeovers of firms listed on the London Stock Exchange by London-listed companies during the period 1990-2000. As Table 1 indicates there were 777 takeovers of this sort during the period: there were a further 388 takeovers mounted by foreign companies. We exclude foreign acquisitions from consideration because of severe data availability problems post-takeover, though we accept that this possibly introduces a bias to our sample. From the population of UK domestic takeovers we select a sample excluding takeovers with the following characteristics: (1) acquisitions of less than 50 per cent of target shares; (2) takeovers by private or newly established companies, including management buy-outs and acquisitions by private equity or venture capital firms; (3) takeovers involving property management, financial (banks, investment trusts etc) and utility companies[i]. This reduces the potential sample size from 777 to 402 takeovers. We then exclude takeovers undertaken by serial or multiple acquirers, or where there are data availability problems. Only one acquisition per acquirer within any three consecutive years has been included in the sample, excluding acquirers that undertake any further large M&A (for example, acquisition of another UK publicly listed firm) during the three post-takeover years. Consequently, any employment growth

observed in the sample can be attributed to organic growth rather than further acquisitions. This gives a final sample of 235 takeovers.

As can be derived from Table 1, the average value of takeover deals in the sample selected is just over 300 million (at 2003 prices). This is somewhat higher than the population of takeovers *by* UK listed companies (average of 253 million) but approximately equal to the average value of all takeovers *of* UK listed companies. The size distribution of takeovers (by acquirer size) is approximately normal with small proportions of very small (under 100 employees) and very large firms (more than 100,000 employees) at each end of the distribution. Unsurprisingly, the distribution of acquired firms is skewed somewhat towards the lower end. In the sample there are takeovers observed in 27 of 38 industrial sectors[ii]. Our sample is broadly representative of the population of takeovers by UK listed companies with one important proviso: serial acquirers are excluded from our sample, with the result that some vibrant takeover sectors, such as pharma and bio-tech, are under-represented. The sample includes firms that make divestments after takeovers. Unfortunately it is not possible to calculate the employment effects of these divestments as companies do not publish this information. We deal with this by reporting results for the full sample and for a reduced sample of 186 companies where cases involving divestment post-takeover are excluded.

TABLE 1 ABOUT HERE

Data on sample takeovers of UK were obtained from *Acquisitions Monthly*, the main industry monitor of M&A in the UK. These data include the names of merging firms, takeover announcement dates, takeover completion dates, premiums, takeover mode and payment mode. Operational and financial data, including the number of workers, staff costs, operating performance, and share price performance data were retrieved from *Datastream* and company accounts. Seven years of data (three years before and three years after the takeover completion year) were collected for each case. Data on the board composition and share ownership of acquiring companies was collected from the *Hambro Company Guide* and the *Price Waterhouse Corporate Register* and refers to the ownership at the end of the last accounting year immediately prior to the takeover event.

Variable definitions

i. Dependent variables

To create the dependent variables we utilise data from two sources. Data on lay-offs were collected from the *Financial Times* and other national newspapers, downloaded via the *Nexis*® database, following the methodology adopted in prior research (Hillier *et al.* 2007; Krishnan *et al.* 2007; O'Shaughnessy and Flanagan 1998) [iii]. Screening newspapers for a period of up to two years from the takeover completion date, we found media reports of employee layoffs in 101 (43 per cent) out of 235 acquisitions[iv]. Almost all of these lay-offs were announced within one year of the transaction completion. Data on announced employee layoffs do not include workforce reductions arising from divestments. They thus refer to reductions rather than transfers of employment. This data is used to create an *Employee layoffs* dummy, which takes the value of 1 if the acquirer is reported to be laying-off at least 1 per cent of the workforce of the merged firms within two years of the takeover.

Second, using *Datastream* data we create employment change variables by comparing pre-takeover combined employment of the acquired and the acquiring firm with post-takeover employment of the acquiring firm. First, we construct pre-takeover employment by combining the number of workers of the acquired and the acquiring firm on the payroll immediately before takeover (ie the figures reported in the annual reports immediately prior to the takeover event). Post-takeover employment is defined as the number of workers of the acquiring firm on its payroll during the post-takeover years (Year 1 or Year 3). Then we compute the employment change one year (three years) after the transaction by subtracting the pre-takeover employment from the post-takeover employment in Year 1 (Year 3). Following Davis *et al.* (2011), we divide the difference between post- and pre-takeover employment with their average value, to create a measure of percentage change that is symmetric either side of zero. Two variables are created by this method: *Employment change after one year* and *Employment change after three years*[v].

ii. Independent variables: ownership and governance

Executive share ownership is the percentage of ordinary shares owned by executive directors and their immediate family members whilst *Non-executive ownership* refers to shareholdings by non-

executive directors and their families. *Executive share options* is the number of rights to shares awarded under executive share option schemes as a percentage of the acquirer's total number of shares in issue. Mean (median) executive share ownership is 5.18 per cent (0.82 per cent) and non-executive mean (median) ownership is 1.32 per cent (0.09 per cent). These ownership levels are similar to those reported in earlier UK research (Cosh *et al.* 2006; Sudarsanam *et al.* 1996).

The *External largest single owner* refers to the largest non-board shareholding in excess of 3 per cent. This shareholder has on average 10.53 per cent ownership (median = 8.85 per cent). We also generate *External large combined ownership* to represent the sum of bloc holdings in excess of 3 per cent. On average, 25.5 per cent shares are held by these shareholders (median = 23.17 per cent). The *Proportion of non-executive directors* is the number of non-executive directors on the board divided by total board size. The average proportion is 0.44, similar to that reported in Cosh *et al.*(2006) and Yawson (2006), and is higher than the minimum proportion of one-third recommended by the Cadbury Committee in 1993[vi].

iii. Control variables

Takeovers may promote synergy, which may in turn result in workforce reductions. There is more scope for elimination of duplication when target and acquisition operate in the same sector, and relatedness has predicted lay-offs (O'Shaughnessy and Flanagan 1998), workforce reductions (Krishnan *et al.* 2007), and reductions in labour demand (Conyon *et al.* 2002a, 2002b; Gugler and Yurtoglu 2004). *Related acquisitions* is a dummy set to 1 when the primary activity of both acquired and acquirer firms is in the same two digit industrial sector, as in Cosh *et al.* (2006). A second, alternative measure is more sophisticated in that it attempts to incorporate the objectives and nature of the transaction. A detailed search of newspaper articles in the *Financial Times* in a three-month period around the takeover generated information on the reasons for the takeover. Based on managers' accounts, and the newspaper's interpretation of these, the data were classified by the research team into four types of mergers: diversification (11 per cent), horizontal growth (46 per cent), horizontal efficiency (27 per cent), and vertical integration (16 per cent)[vii]. These reasons are coded into three dummies with diversification as the reference category.

Acquired firms are generally smaller than their industry average whereas the converse is true for acquiring firms (Conyon *et al.* 2001; 2002a: McGuckin and Nguyen 2001). *Relative employment size* is the ratio of employment in the acquired firm to the acquiring firm in the year immediately prior to takeover. The ratio shows that the median acquirer is about three times larger than the median acquired firm.

The hostility of the takeover is an important control variable. Hostile takeovers are integral to the 'breach of trust' perspective, which suggests that hostile takeovers lead to major wealth transfers from workers to shareholders via wage cuts and employment reductions (Shleifer and Summers 1988). Hostile takeovers can be costly for the acquiring firm because larger premia are typically required (Sudarsanam and Mahate 2006), and lay-offs and workforce reductions may be instigated to pay for them. *Hostile acquisitions* are those classified as hostile by *Acquisitions Monthly* on the basis of whether an initial bid was rejected by the target firm management (Franks and Mayer 1996), and is coded 0,1. 52 transactions (22 per cent of the sample) are classified as hostile in this way.

There is some debate as to the role of acquisition share premia. Krishnan *et al.* (2007) find that high premia are the main factor leading to post-acquisition workforce reductions, though other studies (such as Beckmann and Forbes 2004) find little relationship between the two. The acquisition *Premium* is defined as the percentage difference between the purchase price and the market price of the acquired firm's shares 30 days before the takeover, divided by the latter (Hayward and Hambrick 1997; Sirower 1997)[viii].

Takeovers are typically paid for by cash or shares, or some combination of the two. In the UK approximately 80 per cent of acquisitions by listed companies are paid in cash, declining to around 60 per cent if the targets are also listed (Faccio and Masulis 2005). *Cash-paid acquisition* refers to 100 per cent cash-paid deals. The remaining mixed or share-based deals are coded 0.

Leverage is included as a control because debt restricts free cashflow, and therefore places constraints on managerial actions. In general, firms with higher debt reduce employment more often (Hanka 1998). However, evidence on the role of debt in post-takeover employment

changes is mixed: O'Shaughnessy and Flanagan (1998) find no evidence that debt-financed takeovers are more likely to announce lay-offs but Krishnan *et al.* (2007) find that debt significantly predicts workforce reductions. *Leverage* is defined as the ratio of total debt to total assets at the end of the takeover completion year.

Prior research shows that some post-takeover acquirers undertake large scale asset restructuring including, assets divestments and sell-offs (Franks and Mayer 1996; Haynes *et al.* 2000; Maksimovic *et al.* 2011). For example, Maksimovic *et al.* (2011) report that acquirers sell 27% and close 19% of the plants of target firms within three post-takeover years. We control for acquirers' divestment activity, using data on post-takeover asset divestments collected by screening *Financial Times* for a period of up to three years after the takeover completion year. *Divestments* refers to the acquirers that divest some of the acquired assets. 54 acquirers made significant divestments by the end of Year 1 and further 12 acquirers made divestments by the end of Year 3.

Acquisitions in capital intensive industries may result in lower levels of workforce reductions than those in labour intensive industries, as such there may be less scope for labour efficiency improvements. Thus, we control for *Capital intensity*, defined as the combined fixed asset values of the acquired and acquiring firm at the end the year immediately before the takeover completion, divided by the combined number of employees of the acquired and acquiring firm during that year. We use the natural logarithmic transformation of this variable.

As a further control for industry characteristics and economy-wide effects on employment, we use *Change in control firm employment.* For this purpose, we select a sample of 470 non-merging control firms (Loughran and Ritter 1997; Barber and Lyon 1996). There is a matched firm for each acquired and acquiring firm, selected according to industry (two digit), size (within a 25-200 per cent range) and pre-takeover performance criteria (the closest operating performance at the end of the year prior takeovers). An important criterion for selection was that the matched firm was not involved in major acquisition activity two years before and three years after the sample takeover year. Average employment for the matched firms is obtained by combining the number of employees of the acquired firm match and the acquiring firm match.

Control firm employment change is calculated for the same period as the dependent variable in each case, using the same methodology as above.

The evidence suggests that pre-takeover performance of acquisition targets has an impact on post-transaction employment change (Hillier *et al.* 2007; Coucke *et al.* 2007). As a measure of pre-takeover operating performance of acquired and acquiring firms we use Return on Assets (ROA), defined as Earnings before Interest, Taxes and Depreciation divided by book value of Total Assets at the beginning of the year. In order to control for industry-wide performance changes, we use industry-adjusted ROA, created by subtracting the relevant performance measure of the median firm in the same industry from the firm performance. This variable is not normally distributed, but negative values arising from the adjustment process preclude logarithmic transformation. Instead we use the median of three year pre-takeover industry-adjusted performance. These procedures create *Pre-takeover Target ROA* and *Pre-takeover Acquirer ROA*. A further performance variable is created using the same approach for the year immediately after the takeover completion year: *Post-takeover Acquirer ROA*.

Labour productivity performance is relevant to lay-offs and employment change: O'Shaughnessy and Flanagan (1998) find that lay-offs occur where the productivity of target companies is less than that of their acquirers, whilst Krishnan *et al.* (2007) show that workforce reductions are predicted by pre-takeover productivity. Sales per employee are the measure of labour productivity in the acquired and acquiring firms. We compute each acquired and acquiring firm's labour productivity in the year prior to takeover completion and then scale them using their industry's median labour productivity for the same period. As these relative labour productivity performance measures are positively skewed, we take their natural logarithmic transformation to create *Target Labour Productivity* and *Acquirer Labour Productivity*.

To create *Target Average Wage* and *Acquirer Average Wage* we divide each firm's total staff costs by their number of employees in the year prior to takeover completion. Then we scale each firm's average wage using the industry median wage for the same period. As this relative average wage is positively skewed, its natural logarithmic transformation is used.

Appendix 1 provides further information on variable construction whilst Appendix 2 includes a correlation matrix.

4. Findings

The extent of employment change

Descriptive statistics are provided in Table 2. As well as providing information for the full sample, this table reports statistics for two sub-samples according to post-takeover changes in employment numbers: 'the workforce reduction' sub-sample ('WFR' hereafter), where post-merger combined employment levels decline relative to the pre- takeover employment level, and 'the workforce growth' sub-sample ('WFG' hereafter), where post-merger employment levels grow relative to the pre-merger employment level in the first year after the takeover completion year.

TABLE 2 ABOUT HERE

As Table 2 shows, by the end of the first year after the transaction there is a net reduction in employment in 54 per cent of cases (127/235). The average reduction in employment across companies is 2.6 per cent (median = 2.08 per cent) by the end of Year 1 and 9.2 per cent (median = 8.17 per cent) by the end of Year 3[ix]. The actual change in employment by the end of Year 1 is a reduction of 185,113 employees, 4.8 per cent of the initial combined workforce of 3,854,481 (approximately 15 per cent of the employed UK workforce in 2000). The median employment reduction in companies making net reductions in employment is 14.39 per cent whilst the corresponding increase for employment growth companies is 16.03 per cent. Lay-offs are announced in 43 per cent of cases (101/235) but in 12 per cent (12/101) of these the effects are counter-balanced by employment growth.

But it is important to qualify this picture of employment change. Employment reductions are concentrated in merged companies that divest some operations after the takeover: when companies making divestments are excluded, there is average employment growth of 3.9 per cent per company after one year (median = 2.29 per cent), declining to a mean of 0.13 per cent

after three years (median = 1.68 per cent). Thus, although takeovers as a whole lead on average to negative employment change in post-merger companies, this does not necessarily imply job loss in the economy more widely. Where divestments take place, jobs are transferred rather than destroyed, though it is also the case that post-merger firms making divestments also tend to make lay-offs.

Of course, an issue is the extent to which these employment changes are due to the M&A transaction. To investigate this we use the Average Treatment effect on the Treated (ATE) method (Wooldridge, 2002). The principle behind this is that if the decision to merge is purely random, then the difference between employment growth in the merging and non-merging firms should reveal the causal effect of mergers on employment. To estimate the effects of mergers we compare employment growth in merging firms with that in non-merging firms, controlling for size, prior performance, capital intensity, wage and industry. The ATE method matches several non-merging firms to each acquirer, on the basis of pre-determined pre-takeover characteristics, and estimates the difference in the employment growth with and without mergers. The ATE estimates, given in Appendix 3, show that when the full sample is used mergers do not significantly change the workforce after either a 1 year or 3 year period, though the sign is the same as in the raw estimates. However, when observations with divestment are excluded, then the results show mergers and acquisitions lead to greater workforce growth in comparison to non-merging firms after 3 years.

Determinants of post-merger lay-offs

To consider the relationship between ownership and lay-offs after takeovers, we run a set of probit regressions where lay-off announcements are the dependent, binary variable. Table 3 reports the coefficients and marginal effects (for each variable when the others are held at their mean). Various models are presented to identify the effects of ownership and governance variables. Model 1 reports the baseline regression including *Executive Share Ownership* and *Executive Options*. Model 2 removes *Executive Options* whilst Model 3 includes them in place of *Executive Share Ownership.* Model 4 substitutes *External Large Combined Ownership* for *External Largest Single Owner*. Model 5 replaces the variable for related acquisitions based on

SIC codes with a set of dummies capturing the objectives of the takeover. Model 6 excludes those cases where divestments occur after the takeover.

TABLE 3 ABOUT HERE

Before reporting detailed results for the key variables of interest, it is worth noting that the results are generally fairly stable between the alternative specifications, though model fit improves somewhat with the substitution of the dummies for takeover objectives in place of *Related Acquisitions*. Turning to performance first, profitability performance is not significantly related to the probability of lay-offs except in three models. Neither labour productivity nor relative wage levels, in either the target or acquirer, have significant effects on the probability of lay-offs. Contrary to previous findings (Conyon *et al.* 2002a; Krishnan *et al.* 2007; O'Shaughnessy and Flanagan 1998), related acquisitions do not have a higher probability of lay-offs. The substitution of the dummies for takeover motives in Models 5 and 6 refines these results. Mergers undertaken to achieve rationalisation within an industry (*Horizontal efficiency*) are significantly associated with the probability of lay-offs post-takeover, and the marginal effects are sizeable. *Divestment* is significantly associated with the probability of lay-offs, with sizeable marginal effects, confirming that those firms making lay-offs also tend to be divesting parts of the combined company shortly after the transaction. The fact that the coefficient and marginal effects for *Divestment* reduce by around 20 per cent when the dummy for *Horizontal efficiency* is inserted (Model 5) reinforces this interpretation[x] Relative *employment size* is significant at $p<0.01$ or better in all models, indicating that a smaller difference in size between acquirer and target affects the probability of lay-offs and employment reductions[xi]. There are no significant differences in the probability of lay-offs arising from hostile acquisitions, contrary to the 'breach of trust' perspective (Shleifer and Summers 1988). By contrast, higher levels of leverage have significant and sizeable effects on the probabilities of lay-offs, presumably because debt repayment and servicing requirements necessitate cost savings (O'Shaughnessy and Flanagan 1998).

Each set of models in Table 3 report different specifications of ownership and governance. All apart from Model 3, where executive ownership is not included, clearly show that executive share ownership is negatively related to the probability of lay-offs, though the

magnitude of effects is not large. By contrast, the signs on *Executive share options* are negative but insignificant in all models. Turning to the role of other shareholders, the results show generally negative relationships with lay-offs. *External largest single owner* has insignificant effects on the probability of lay-off announcements, as does *External large combined ownership* A higher proportion of non-executive directors has a significant negative and substantial effect on the probability of lay-offs in all models apart from Models 3 and 6[xii]. Meanwhile, ownership by non-executives has very small and insignificant relationships with lay-offs: this is unsurprising given that in most cases non-executives have low levels of ownership (median = 0.09 per cent).

The headline finding then in Table 3 is that the larger the size of executive share ownership the lower the probability of lay-offs. Although the data used allows us to say little about managerial motivations, the findings presented in the table indicate little support for the entrenchment argument because the coefficient signs are the same for all ownership and governance measures, with higher proportions of non-executives significantly associated with lower probability of lay-offs. In other words, shareholders and shareholder representatives appear to be taking the same stance as executive managers.

Employment change

The analysis so far provides an indication of the factors associated with the probabilities of lay-offs. In this section, OLS models are used to investigate the relationship between ownership and governance to actual workforce change in the year immediately after the takeover (Table 4) and after three years (Table 5). Several models are analysed. In Models 1, 3, 4, and 6 the full sample is used. In Models 2 and 5 cases where divestment is known to have occurred are excluded so that the employment change variable captures job loss (as opposed to job transfer) more precisely. Models 7 and 8 are based on two sub-samples: those transactions leading to workforce reduction and those leading to workforce growth. The sample is split in this way because the effects of the independent variables may be asymmetric. This approach is repeated in Models 9

and 10 but with divestment cases excluded. In these models the headline finding is clear: executive share ownership is positively associated with employment growth.

TABLE 4 ABOUT HERE

Models 1-6 in Table 4 report results for the whole sample at the end of the first year after takeover when the dependent variable includes both positive and negative values. Most models show that the profitability performance of the acquirer and the acquired firm prior to takeover have a positive relationship with employment change. Pre-takeover productivity appears to have no bearing on employment change but pre-takeover relative wage levels in the target company exhibit a significant negative relationship with employment changes post-takeover. Neither *Related acquisitions* nor takeover objectives have a significant effect on employment change but the relative size of the target continues to have a significant negative effect in some specifications. Other transaction variables tend to have insignificant relationships with employment change. *Hostile* acquisitions and *Cash acquisitions* are insignificant in all but one model, whilst *Premium* is insignificant throughout. Leverage is insignificant in the full sample but has sizeable negative effects when divestment cases are removed. This variability in this result seems to be due to a high correlation between leverage and divestment. This is entirely plausible: firms that incur high levels of debt in mounting takeovers are likely to sell-off assets to reduce the debt, as well as reduce employment

Turning to governance and ownership, executive share ownership has a significant and sizeable positive relationship with employment change in Models 1-6. All of the other governance and ownership variables are insignificant in the full sample and reduced sample models. It is interesting to note, however, that share options have the opposite effect to ownership, with the options coefficient just failing to become significant at $p < 0.05$. This is as predicted, and consistent with earlier work on managerial ownership and labour policies (Cronqvist *et al.* 2009). Further, options have no downside risk so can encourage riskier managerial behaviour (Sanders 2001)**.** When both share ownership and share option variables are inserted separately (not shown in Table 4), the effects of each are broadly unchanged, indicating that the two function independently of each other. This is confirmed by the very low correlation between the two variables (see the correlation matrix in Appendix 2).

Although the employment change variable is constructed to be symmetrical between positive and negative values, it is possible that the determinants of employment change are asymmetric between growth and decline. To investigate this, Models 7 and 8 report results when the sample is split into two sub-samples: workforce reduction (WFR) and workforce growth (WFG). In Model 7 (WFR) the employment effect is always negative: to facilitate interpretation the signs on the reported coefficients are reversed. Thus a positive coefficient means a positive relationship with employment reductions. There are no significant variables in Model 7. In Model 8 (the workforce growth sub-sample) positive signs indicate positive relationships with employment growth. Here the results indicate that takeovers of firms with higher profitability tend to be associated with subsequent employment growth. Executive ownership has a substantial positive relationship with employment growth (at $p < 0.01$).

In Models 9 and 10 the sample is reduced by removing cases where employment change is affected by divestments. The results are qualitatively the same as in Models 7 and 8. In Model 9 the ownership and governance variables remain insignificant whilst in in Model 10 executive ownership continues to have a sizeable, positive significant relationship with employment growth. The pre-takeover profitability performance of both target and acquirer continue to be associated with employment growth.

TABLE FIVE ABOUT HERE

Table 5 examines determinants of employment change between the takeover and the third year post-takeover. There is considerable continuity with the results for the first year after the takeover. In most specifications for the full models *Executive share ownership* continues to have significant positive (at $p< 0.05$ or better) effects on employment change, though the coefficients are smaller than in Table 5. Other ownership and governance variables, including share options, have insignificant effects. The profitability of the target prior to takeover continues to impact on employment change, as do its wage levels in a negative direction. In the Year 3 models, however, the negative effects of leverage become stronger in both the full sample and when companies with divestments are excluded.

To summarise so far, *Executive share ownership* has a strong positive relationship with employment change, and the effect seems to be concentrated in cases of employment growth. None of the other ownership and governance variables are significant, except the *Proportion of non-executive directors* in Table 4, Model 8. The fact that these variables are mainly insignificant suggests that entrenchment of executives is not a reason for the association between executive share ownership and employment growth. They may, of course, be pursuing their own interests but there is no evidence that this puts them at odds with major shareholders.

The positive effects of executive share ownership on employment change may conceal more complex relationships given that the governance literature has suggested that ownership may have both alignment and entrenchment (i.e. opposing) effects. This literature has found that the relationship between managerial ownership and performance is non-linear (Bos *et al.* 2012; Cosh *et al.* 2006; Morck *et al.* 1988; Short and Keasey, 1999). The argument goes that low levels of ownership are associated with improvements in performance, and this reflects an alignment effect of incentives. However, the effects of incentives diminish, and the potential for securing effective control increases, as the size of managerial ownership increases. Thus, beyond a certain point managerial owners are said to become entrenched. In principle, similar processes might be observed in relation to employment change. At low levels of ownership managers may be incentivised to reduce employment but at higher levels insider control may encourage them to expand employment.

TABLE 6 ABOUT HERE

To investigate this, several non-linear models are run and these are summarised in Table 6. A quadratic term for executive ownership is added to the baseline models reported in Tables 4 and 5. First differencing the combination of a negative sign on the original variable, a positive and significant sign on the squared variable indicates that the regression line is slightly convex for the full sample for employment change in the first year. When divestment cases are excluded, the coefficient on the original variable becomes positive but neither this nor the squared variable significant. When the exercise is repeated for three years post-takeover none of the coefficients are significant. In all cases the change in model fit between linear and polynomial models is small or non-existent, and overall the results suggest that the relationship

between executive ownership and employment change is not markedly non-linear. Figure 1 displays the post-estimation polynomial regression line for the Year 1 model where all other variables are held at their mean. It shows that at low levels of executive ownership average employment change is slightly negative, with the inflection point at 7.3 per cent, before becoming strongly positive. Figure 2 shows the same model where cases of divestment are excluded. Visual comparison of Figures 1 and 2 highlights that employment reductions are concentrated in companies where divestments occur. Although there is some convexity to the relationship, overall there is little evidence to support a non-linear relationship of alignment and entrenchment as far as executive ownership and employment change are concerned.

FIGURES 1 AND 2 ABOUT HERE.

Further analysis

i) Moderation by contextual factors

The results indicate that executive share ownership has a positive relationship with employment change. It is possible that the effects of ownership are concentrated in certain situations, and that the direction of their effects is contingent on context. For instance, executive ownership might be expected to have negative effects on employment when takeovers are instigated to bring about horizontal restructuring and efficiencies, but positive otherwise. To investigate this, the share ownership and share option variables are interacted with a range of other variables used in this analysis. The interaction models relate to employment change one year after the takeover and are based on Models 1 and 4 in Table 4 (depending on whether the *Relatedness* or takeover objectives results are reported). *Executive share ownership*, and then *Executive share options*, are interacted with leverage, cash, relatedness, the various takeover objectives, premium, relative employment size, and target ROA. The results are summarised in Table 7.

TABLE 7a AND b ABOUT HERE

In nearly all instances the interactions with executive share ownership and options are insignificant, whilst the coefficients on ownership mainly retain levels of magnitude and significance found in models without these interaction terms. As for options (Table 7b), the options coefficient becomes significant in several instances indicating that options become more powerful in certain situations where the conditioning variable takes a low value. For both executive ownership and options, model fit remains more or less unchanged with the addition of interaction terms.

There are four exceptions to the pattern of insignificant interaction terms. One, the interaction of *Premium* and *Executive share ownership* is positive and significant. This is perhaps surprising because other studies have found that high premiums are associated with reductions in employment. The explanation has been that reductions in wage costs are necessary to recoup takeover costs (Krishnan *et al.* 2007). Ownership might incentivise managers to reduce employment in these situations. Instead the opposite is the case. A possible explanation is that executives with ownership pay high premia where they are confident of the growth prospects for the firm, and that, contrary to earlier findings about the dangers of over-confidence (Malmendier and Tate 2005; 2008), this confidence appears to be justified by subsequent employment growth. Two, there are positive interaction effects on employment where executives with a high level of ownership take-over companies that are relatively large. Otherwise, taking over relatively large companies has significant negative effects on employment change. Once again, a selection explanation seems most credible. Given that acquiring larger firms can create more pronounced integration problems, as reported by Smeets *et al*. (2012), incentivized managers may only take-over relatively large firms when the risks are perceived to be small and they are confident of growth prospects. Three, where high levels of executive ownership are present in takeovers aimed at diversification positive employment change is observed, suggesting that incentivized executives mount takeovers involving diversification to create growth. Confidence that integration will not be a problem may also be a factor. Four, where executives with options take-over firms with high profitability (*Target ROA),* and take-over firms to diversify, employment growth is observed. Once again, this is consistent with selection explanations.

ii) Selection effects

Since the findings so far indicate that selection effects could explain the positive relationship between executive ownership and employment growth, selection effects are considered further. Executive ownership could incentivize top managers to take-over firms with better performance or growth prospects because their wealth is at risk. Alternatively, executive options might encourage managers to mount more risky takeovers because option holders are protected from downside risk (Tufano 1996; Sanders and Hambrick 2007). To consider these possibilities we test for the effect of ownership and governance variables on the type of takeovers undertaken and various aspects of the target company performance[xiii]. Table 8 reports results.

TABLE 8 ABOUT HERE

We first mount a series of probits where takeover motives are the dependent variable. The results presented provide strong evidence for a selection explanation of the relationship between ownership and employment change post-takeover. Executives with share ownership have a significant probability of mounting takeovers for growth objectives but have a significant lower probability of mounting takeovers aimed at rationalisation (*Horizontal efficiency*). The clear implication is that executives with ownership mount takeovers that are more likely to lead to employment growth. None of the other ownership and governance variables are significant, with the exception of *Non-executive share ownership* (the positive effect suggests that the positive effects on *Executive share ownership* reflect alignment rather than entrenchment effects). It is notable that *Executive options* are associated with neither growth nor rationalisation takeovers. The results of probits where diversification and vertical integration are takeover objectives are not reported as all ownership and governance variables are insignificant. These results are not surprising as there is no clear theoretical reason for expecting that incentivized executives will be more or less likely to mount takeovers with these objectives.

Next we consider whether executive ownership has any relationship with the performance of target companies. The rationale is that executive shareholders will take-over better performing companies because of the possible effects of the takeover on their wealth. The results show no relationship between *Executive share ownership* and *Target ROA* but there is a significant positive relationship with labour productivity of the target company. Executives with ownership take-over more productive companies, and this may partly explain why executive ownership is associated with employment growth after takeovers. It is interesting to note that *Executive options* also has a significant positive relationship with *Target labour productivity*. None of the other ownership and governance variables are significant, with the exception of *External large combined ownership* on *Target ROA*: it is difficult to explain this result as it seems counter-intuitive.

Overall, these findings suggest that the relationship between executive ownership and employment change observed in the paper can at least in part be attributed to selection effects. Executives with ownership mount takeovers aimed at growth rather than restructuring, and to do this they select more productive firms as targets. Although this evidence cannot conclusively lead us to reject an entrenchment perspective on the reasons for employment growth where executives have ownership, it does provide further evidence to indicate that entrenchment is not the most important reason for the observed employment changes after takeovers.

5. Conclusions

This paper has examined the determinants of employment change in the immediate aftermath of M&A using a sample of 235 UK mergers. Contrary to widely-held views, these transactions do not always lead to employment reductions. In fact, in 46 per cent of cases, employment grew in the first year post-transaction compared with the combined employment of target and acquirer at the time when the transaction occurred. Where employment was reduced, the median change was 16 per cent. Where it increased the change was around 14 per cent. The median change in employment by the end of the first year was -2.6 per cent, growing to -9.2 per cent after three years. When we exclude cases where divestments occurred shortly after the

takeover, most cases display employment growth after the takeover (cf. Denis 1994). By the end of the first year median employment change was 2.3 per cent, rising to 5 per cent by the end of the third year. This indicates that much of the net employment reduction observed in our sample is due to transfer of jobs to other firms rather than to absolute job loss. These findings cast doubt on claims that takeovers are nearly always bad for labour, though the welfare effects of job transfer are not under-estimated (and we do not know what happens to employees subsequent to job transfers). However, it should be borne in mind that our sample selection criteria, adopted for methodological reasons, excludes some takeovers which may be more likely to reduce jobs (eg. those made by foreign firms). Serial acquirers are also excluded. For this reason we do not claim that our sample is fully representative of all takeovers of listed companies in the UK.

The main contribution of the paper is that it investigates the role of ownership and governance in post-takeover employment change. Although this issue has been repeatedly raised in the recent governance and labour literature, there has been little empirical investigation. Our findings are novel: executive ownership is positively associated with employment growth, and negatively predicts the probability of lay-offs post-transaction. This result is consistently found in very nearly all specifications, with a range of controls for company and takeover characteristics. These results are most clearly seen at the end of the first year of takeover but the effects persist through to the end of the third year. We also tested for the effect of other features of ownership and governance but for the most part these do not appear to have significant effects on employment change. In particular, executive options do not affect lay-offs or employment change. This is perhaps not surprising: predictions about the effects of options highlight their contribution to decisions with high variance but within a sample of takeovers these decisions may cancel each other out. Large shareholders, considered as either the single large bloc holder or the group of all large shareholders, do not appear to have an important bearing on employment change. Non-executive share ownership has insignificant effects throughout but the proportion of non-executive directors has a negative effect on lay-offs, a result that mirrors research on non-executives more generally (Mura 2007).

Previous work in the executive ownership and performance literature has drawn attention to the opposing effects of ownership on alignment and entrenchment (Bos *et al.* 2012; Morck *et*

al. 1988; Cosh *et al.* 2006), and we have considered whether a similar phenomenon might be observed in the case of employment change. In particular, an issue is whether rising ownership by executives insulates them from shareholder discipline, thereby enabling them to 'go soft' on labour and to embark on 'empire building'. We find little evidence to support the entrenchment perspective, though it is possible that managers also enjoy private benefits from employment growth. The coefficients on the measures of other shareholders are always insignificant, often tiny, and generally take the same sign as the executive ownership coefficients. Where governance variables are significant, as in the case of the proportion of non-executive directors (in relation to lay-offs), they take the same sign as executive ownership. We examined the linearity of executive ownership at the end of years one and three, and found no evidence of the U-shaped curves observed in the performance literature. Finally, we note that the profitability performance of the post-transaction company has significant positive effects on employment change, suggesting that executive ownership does not function to encourage employment growth at the expense of profitability (though a partial substitution effect cannot be ruled out).

In place of an entrenchment effect our findings support a selection perspective. Executives with ownership appear to be incentivized to mount takeovers of better performing companies and with growth rather than rationalisation objectives. These effects then feed through post-takeover to support employment growth. Evidence for this perspective comes from analysis of moderation effects, where significant interaction terms are most readily interpreted in this way, and from consideration of the role of executive ownership in influencing takeover types and target companies. A further novelty in the paper is that we integrate qualitative data on the purposes of particular takeovers into our analysis. This enables us to differentiate between takeovers aimed at market growth and those at restructuring, as well as supply chain integration and diversification. It is clear from our findings that there is a group of takeovers where rationalisation and restructuring are very important features. Lay-offs, divestments, and employment reductions all take place after the transaction. But, these are not transactions mounted by managers with substantial ownership stakes. These findings are consistent with a prospect theory perspective (Kahneman and Tversky 1984): executives with wealth at risk will not want to take actions which could have adverse effects on their wealth, whereas managers without equity wealth in the company may take more risky actions. They have less to lose.

The significance for policy and practice of our results is that as ownership by executives is increasingly promoted in the UK, in place of other instruments such as stock options, the effects of takeovers may come to have more benign effects on labour in the longer term. In the context of the current policy debate in the UK about takeover regulation, our evidence might suggest that further regulation may not be necessary to protect labour's interests, at least as far as takeovers by UK listed firms are concerned. However, it should be borne in mind that the period of the study was a takeover wave where many takeovers were aimed at taking advantage of growth opportunities rather than rationalisation of contracting industries and excess capacity. A further consideration is the growth in cross-border M & A activity: host country employees may suffer more than country of origin employees after takeovers (Girma and Gorg 2003). Thus, there may be a case for further regulation of takeovers by foreign firms, at least from a labour perspective.

Although we have been able to merge together data from company accounts, shareholder registers, and qualitative sources, there are nevertheless some limitations with our data. Most important, we have to focus on net employment change rather than the parallel processes of job creation and destruction. Our data is derived from company level and we do not have access to plant-level data on employment unlike a recent large-scale US study on private equity and employment (Davis *et al.* 2011). Nor are we able to quantify the employment transfer and job loss effects of divestments as this information is not reported by companies (cf. Denis 1994), though we can exclude cases where divestments to take place. When these companies are excluded, the average employment effect of takeovers is positive. Interpretation of our results should also take into account that the 1990s was characterised by takeovers aimed at enhancing growth rather than rationalising industries in response to excess capacity, as occurred in the 1980s (Martynova and Reeneboog 2005).

Although our interpretations are limited by our data sources, the important role of managerial ownership emphasizes that there are three main actors in takeovers and their aftermath: management, labour, and shareholders. Much of the takeover literature tends to focus on 'dyads' of managers and shareholders, or shareholders and employees. In particular, the labour-focused literature on wages and employment changes tends to refer primarily to shareholders, largely in terms of whether there is a value transfer between the two groups

(Shleifer and Summers 1988; Beckman and Forbes 2004). But it is clear from our findings that management is important too, and that characteristics of executives have an important impact on outcomes. Ideally future research will be able to expand the range of managerial characteristics under consideration.

Table 1. Takeovers of UK public companies during 1990 – 2000

Year	Takeovers of UK public companies		Takeovers by foreign companies		Takeovers by UK public companies		Sampled takeovers of UK public companies	
	Number	Transaction value (£m)	Number	Transaction value (£m)	Number	Transaction value (£m)	Number	Transaction value (£m)
1990	125	14,636	53	8,306	72	6,330	17	2,389
1991	89	8,018	29	1,802	60	6,216	22	4,884
1992	60	12,946	17	5,031	43	7,915	14	2,122
1993	58	3,711	16	1,017	42	2,694	16	1,482
1994	64	5,158	24	1,766	40	3,392	12	1,368
1995	87	41,996	29	12,041	58	29,955	26	18,216
1996	87	25,422	28	8,484	59	16,938	15	1,856
1997	123	34,502	54	15,593	69	18,909	23	5,445
1998	162	44,065	58	21,890	104	22,175	29	8,882
1999	197	74,317	41	46,595	156	27,722	34	11,510
2000	113	85,724	39	30,703	74	55,021	27	12,768
Total	1165	350,495	388	153,228	777	197,267	235	70,922

Source: *Acquisitions Monthly*, 1990 – 2000.
Notes: The transaction values are expressed in real terms (2003 pounds sterling).

Table 2 Descriptive statistics

	Full sample			WFR sub-sample			WFG sub-sample		
	Mean	Med	SD	Mean	Med	SD	Mean	Med	SD
Panel A: Pre-takeover labour data									
Target employment (number of employees)	3313	770	9067	4485	1096	11068	1586	623	4295
Acquirer employment (number of employees)	13088	2975	27036	16427	3285	32413	8167	2903	15000
Target matched firm employment[a]	2088	706	4729						
Acquirer matched firm employment	9214	2661	16740						
Target average wage (£000)	23.33	21.58	12.08	22.39	21.23	9.80	24.71	21.81	14.76
Acquirer average wage (£000)	23.04	22.11	9.77	22.77	21.68	10.53	23.44	22.96	8.57
Number of observations	235			127			108		
Panel B: Post-takeover layoffs and employment change									
Acquirers that announce employee lay-offs (number)	101			89			12		
Percentage of laid off employees post-merger[b] (%)	-7.82	-6.06	6.96	-5.40	-2.84	6.38	-0.75	0.00	2.79
Employment change by the end of Year 1 (%)	-2.60	-2.08	32.69	-23.85	-15.50	24.76	22.39	14.84	21.19
Employment change by the end of Year 3[c] (%)	-9.20	-8.17	51.23	-34.52	-26.46	42.31	20.90	21.38	44.27
Matched firm employment change by the end of Year 1 (%)	-1.25	1.40	26.20	-5.75	-2.22	28.98	4.04	5.52	21.45
Matched firm employment change by the end of Year 3 (%)	-3.29	1.58	40.39	-9.33	-3.39	41.56	3.83	5.71	37.93
Panel C: Divestments and employment change									
Divestments by the end of Year 1 (number)	54			46			8		
Divestments by the end of Year 3 (number)	66			55			11		
Empl. change for non-divestment subsample by the end of Yr 1	3.99	2.29	29.31	-19.44	-12.24	18.53	22.99	15.06	21.69
Empl. change for non-divestment subsample by the end of Yr 3	2.24	5.42	46.04	-37.11	-24.85	37.24	32.59	24.52	23.83
Panel D: Ownership and governance									
Executive share ownership (%)	5.18	0.82	10.25	3.13	0.47	5.62	7.59	1.48	13.49
Executive share options (%)	0.72	0.32	1.46	0.88	0.41	1.89	0.53	0.37	0.63
Non-executive share ownership (%)	1.32	0.09	3.83	1.09	0.07	2.74	1.61	0.11	4.80
External largest single ownership (%)	10.53	8.85	8.99	9.77	8.81	8.63	11.43	10.30	9.06
External large combined ownership (%)	25.50	23.17	19.34	25.48	23.09	20.27	25.36	23.03	18.26
Proportion of non-exec. directors (ratio)	0.44	0.44	0.14	0.44	0.43	0.14	0.44	0.44	0.14
Panel E: Synergy									
Related acquisitions (number)	141			71			70		
Diversification (number)	26			18			8		
Horizontal growth (number)	109			43			66		
Horizontal efficiency (number)	63			46			17		
Vertical integration (number)	37			20			17		
Relative employment size (ratio)	0.81	0.35	1.78	1.05	0.44	2.27	0.52	0.21	0.83
Panel F: Transaction related data									
Hostile acquisitions (number)	52			34			18		
Cash-paid acquisitions (number)	68			43			25		
Leverage (ratio)	0.45	0.46	0.18	0.48	0.50	0.19	0.42	0.42	0.17
Premium (%)	38.57	37.00	34.53	35.77	35.00	34.05	41.50	38.00	35.07
Capital intensity (£000 per employee)	82	23	393	86	27	487	78	25	242
Panel G: Pre-takeover performance data									
Target ROA (unadjusted, %)	0.17	0.15	0.13	0.16	0.15	0.09	0.19	0.15	0.19
Acquirer ROA (unadjusted, %)	0.20	0.18	0.22	0.20	0.18	0.27	0.21	0.19	0.15
Target labour productivity (unadjusted, £000)	149	98	175	135	90	125	168	104	255
Acquirer labour productivity (unadjusted, £000)	130	96	115	126	94	125	138	103	104

Notes: The table reports deal-weighted average employment change, where all M&A transactions are weighted equally. a - number of the target matched firms is 235 and acquirer matched firms is 235. b - percentage of laid off employees only for those acquirers that make employee layoffs, i.e. only for the sub-sample of 101 acquirers. c - number of observations in Year 3 declines to 208 due to missing data for 27 acquirers. Consequently, employment change by the end of Year 3 represents workforce change only for continuing observations.

Table 3 Determinants of merger-related employee layoffs

Dependent variable:	Employee lay-offs											
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Independent variables	Coefficients	Marginal effects	Coefficients	Marginal effects	Coefficients	Marginal effects	Coefficients	Marginal effects	Coefficients	Marginal effects	Coefficients	Marginal effects
Executive share ownership	- 0.074***	- 0.021***	- 0.074***	- 0.021***			- 0.075***	- 0.021***	- 0.064***	- 0.018***	- 0.090***	- 0.024***
Executive share options	- 0.064	- 0.018			- 0.042	- 0.013	- 0.057	- 0.016	- 0.057	- 0.016	0.016	0.004
Non-executive share ownership	0.011	0.003	0.007	0.002	- 0.002	- 0.001	0.013	0.004	0.017	0.005	0.014	0.004
External largest single ownership	- -0.010	- 0.003	- 0.011	- 0.003	- 0.007	- 0.002						
External large combined ownership							- 0.010	- 0.003	- 0.009	- 0.003	- 0.009	- 0.002
Proportion of non-exec. directors	- 1.877*	- 0.534*	- 1.663*	- 0.475*	- 0.934	- 0.295	- 1.787*	- 0.505*	- 1.910*	- 0.537*	- 1.395	- 0.365
Related acquisitions	- 0.045	- 0.013	- 0.043	- 0.012	- 0.065	- 0.020	- 0.033	- 0.009				
Horizontal growth									- 0.241	- 0.069	- 0.237	- 0.064
Horizontal efficiency									1.099***	0.289***	1.081**	0.307**
Vertical integration									0.37	0.106	0.403	0.116
Relative employment size	0.292***	0.083***	0.280**	0.080**	0.230**	0.073**	0.320***	0.090***	0.380***	0.107***	0.386***	0.101***
Hostile acquisitions	0.323	0.094	0.305	0.089	0.275	0.089	0.284	0.082	0.155	0.043	- 0.073	- 0.019
Premium	- 0.190	- 0.054	- 0.176	- 0.050	- 0.111	- 0.035	- 0.192	- 0.054	- 0.006	- 0.002	0.140	0.037
Cash paid acquisitions	0.463	0.135	0.468	0.136	0.495*	0.160*	0.463	0.133	0.46	0.123	0.537	0.124
Leverage	1.387*	0.395*	1.380*	0.394*	1.684**	0.533**	1.437*	0.407*	1.854**	0.521**	1.652*	0.432*
Capital intensity	- 0.137	- 0.039	- 0.137	- 0.039	- 0.099	- 0.031	- 0.151	- 0.043	- 0.151	- 0.042	- 0.153	- 0.040
Divestment	0.894***	0.247***	0.893***	0.248***	0.988***	0.297***	0.852***	0.236***	0.607*	0.182*		
Target pre-takeover ROA	- 1.278	- 0.364	- 1.308	- 0.373	- 1.146	- 0.363	- 1.425*	- 0.403*	- 1.224	- 0.344	- 1.450*	- 0.380*
Acquirer pre-takeover ROA	- 1.365	- 0.388	- 1.261	- 0.360	- 0.625	- 0.198	- 1.305	- 0.369	- 1.838*	- 0.516*	- 1.317	- 0.344
Target pre-takeover labour productivity	0.263	0.075	0.246	0.070	0.195	0.062	0.273	0.077	0.145	0.041	- 0.053	- 0.014
Acquirer pre-takeover labour productivity	- 0.107	- 0.031	- 0.074	- 0.021	- 0.149	- 0.047	- 0.117	- 0.033	0.112	0.032	0.202	0.053
Target pre-takeover average wage	0.442	0.126	0.445	0.127	0.387	0.122	0.452	0.128	0.451	0.127	0.645	0.169
Acquirer pre-takeover average wage	0.015	0.004	- 0.012	- 0.004	0.129	0.041	- 0.029	- -0.008	- 0.282	- 0.079	- 0.247	- 0.065
Constant	0.986*	*	0.839		- 0.145		1.163**	**	0.772		0.641	
Log-likelihood	- 118.306		- 118.73		- 130.153		- 116.983		- 103.675		- 80.686	
Restricted log-likelihood	- 160.565		- 160.565		- 160.565		- 160.565		- 160.565		- 114.977	
Chi-squared	73.594***		74.178***		66.359***		74.260***		102.407***		64.551***	
Pseudo-R-squared	0.263		0.261		0.189		0.271		0.354		0.298	
Number of observations	235		235		235		235		235		181	

Notes: The estimation method is probit regression. Significance levels: *p<0.05; **p<0.01; ***p<0.001.

Table 4 The effects of ownership and governance on employment change in Year 1

Dependent variable:	**Employment change in Year 1**									
	Full sample						WFR	WFG	WFR	WFG
Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Executive share ownership	0.200**	0.262***	0.182**	0.161*	0.223**	0.241***	0.184	0.337**	0.149	0.330**
Executive share options	- 0.135	- 0.096	- 0.121	- 0.133	- 0.091	- 0.128	0.163	0.169	- 0.038	0.158
Non-executive share ownership	0.040	0.009	0.052	0.038	0.004	0.086	0.026	- 0.037	0.125	- 0.033
External largest single ownership	0.077	0.078					- 0.053	- 0.020	0.060	- 0.004
External large combined ownership			- 0.040	- 0.041	- 0.036	- 0.021				
Proportion of non-exec. directors	- 0.040	- 0.010	- 0.030	- 0.015	0.035	- 0.046	0.139	0.219*	0.083	0.193
Related acquisitions	0.002	0.067	- 0.017			- 0.023	0.016	- 0.159	0.130	- 0.150
Horizontal growth				0.168	0.229					
Horizontal efficiency				0.003	0.015					
Vertical integration				0.122	0.159					
Relative employment size	- 0.185*	- 0.190*	- 0.164	- 0.142	- 0.159	- 0.257**	0.061	0.056	0.211	0.048
Hostile acquisitions	- 0.066	- 0.047	- 0.067	- 0.058	- 0.051	- 0.117*	0.115	0.007	0.106	- 0.025
Premium	0.045	0.041	0.043	0.037	0.028	0.023	- 0.052	- 0.100	- 0.039	- 0.086
Cash paid acquisitions	- 0.104	- 0.127	- 0.111	- 0.081	- 0.107	- 0.176*	0.005	- 0.018	0.174	- 0.014
Leverage	- 0.106	- 0.266**	- 0.109	- 0.092	- 0.236**	- 0.048	- 0.030	- 0.072	0.257	- 0.076
Capital intensity	0.052	0.174*	0.061	0.049	0.159	0.020	0.190	0.027	0.018	0.041
Change in control firm employment	0.133	0.088	0.130	0.139	0.131	0.192*	0.037	0.035	0.209	- 0.012
Divestment	- 0.221***		- 0.239***	- 0.208**			0.181	- 0.088		
Target pre-takeover ROA	0.184***	0.267***	0.168***	0.163***	0.239***		- 0.096	0.211*	- 0.031	0.208*
Acquirer pre-takeover ROA	0.142*	0.133	0.136	0.141*	0.115		- 0.057	0.289*	- 0.130	0.325**
Acquirer post-takeover ROA						0.263***				
Target pre-takeover labour productivity	0.119	0.135	0.118	0.122	0.106	0.071	- 0.189	0.133	- 0.157	0.131
Acquirer pre-takeover labour productivity	- 0.106	- 0.196	- 0.103	- 0.133	- 0.218	- 0.051	- 0.082	- 0.186	0.054	- 0.173
Target pre-takeover average wage	- 0.248**	- 0.288**	- 0.238**	- 0.213*	- 0.238*	- 0.208*	0.195	- 0.263	0.166	- 0.253
Acquirer pre-takeover average wage	0.138	0.138	0.121	0.132	0.133	0.110	0.048	0.124	0.070	0.122
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-statistic	4.15***	3.38***	4.36***	4.56***	3.71***	3.82***	2.27**	2.56***	4.53***	2.67***
Adjusted R squared	0.28	0.21	0.28	0.293	0.226	0.23	0.09	0.31	0.21	0.31
Number of observations	235	181	235	235	181	235	127	108	81	100

Notes: The estimation method is OLS, using heteroscedasticity-robust standard errors. Significance levels: *p<0.05; **p<0.01; ***p<0.001.

Table 5 The effects of ownership and governance on employment change by the end of Year 3

Dependent variable:	**Employment change by the end of Year 3**									
	Full sample						WFR	WFG	WFR	WFG
Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Executive share ownership	0.121*	0.202**	0.125*	0.094	0.176**	0.173**	0.128	0.145	-0.153	0.134
Executive share options	-0.038	-0.064	-0.031	-0.037	-0.072	-0.073	0.019	0.050	0.006	0.019
Non-executive share ownership	0.030	-0.039	0.021	0.004	-0.094	0.031	-0.114	0.161	0.036	0.077
External largest single ownership	0.101	0.116					-0.085	0.037	0.010	-0.015
External large combined ownership			0.062	0.056	0.041	0.040				
Proportion of non-exec. directors	-0.079	0.003	-0.068	-0.068	0.053	-0.075	0.061	0.019	-0.147	-0.008
Related acquisitions	0.019	0.047	0.005			0.034	0.131	-0.092	0.188	-0.071
Horizontal growth				0.199	0.232					
Horizontal efficiency				0.029	-0.062					
Vertical integration				0.032	0.114					
Relative employment size	-0.102	-0.089	-0.106	-0.099	-0.093	-0.246*	-0.070	-0.060	-0.104	-0.057
Hostile acquisitions	0.017	0.009	0.015	0.027	0.008	-0.057	0.086	-0.051	0.212	-0.124
Premium	0.060	0.114	0.058	0.034	0.070	0.011	-0.245**	-0.035	-0.195	0.008
Cash paid acquisitions	-0.042	-0.024	-0.047	-0.029	-0.001	-0.196*	0.018	-0.164	-0.129	-0.186
Leverage	-0.212**	-0.348***	-0.217**	-0.222**	-0.305***	-0.252**	0.139	-0.243	0.359*	-0.230
Capital intensity	0.135	0.259*	0.150	0.138	0.248**	0.127	-0.003	0.272*	-0.160	0.303
Change in control firm employment	0.072	0.213*	0.061	0.060	0.222*	0.060	0.090	-0.014	0.034	-0.010
Divestment	-0.265***		-0.265***	-0.224**			0.150	-0.043		
Target pre-takeover ROA	0.132**	0.217**	0.127*	0.123*	0.175*		0.011	0.207*	-0.133	0.236*
Acquirer pre-takeover ROA	0.128	0.060	0.122	0.121	0.048		-0.115	0.203	0.051	0.157
Acquirer post-takeover ROA						0.141*				
Target pre-takeover labour productivity	0.147	0.125	0.153	0.149	0.088	0.086	-0.317	0.046	-0.303	0.049
Acquirer pre-takeover labour productivity	-0.106	-0.219	-0.108	-0.119	-0.268*	-0.099	0.114	-0.192	0.429	-0.243
Target pre-takeover average wage	-0.223*	-0.239*	-0.224*	-0.200*	-0.182	-0.205	0.310*	-0.161	0.449	-0.162
Acquirer pre-takeover average wage	0.123	0.151	0.121	0.122	0.200	0.173	-0.055	0.203	-0.273	0.205
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-statistic	4.05***	3.97***	4.03***	4.22***	3.41***	2.56***	1.30	7.03***	1.25	5.82***
Adjusted R squared	0.15	0.14	0.14	0.16	0.18	0.10	0.04	0.18	0.10	0.14
Number of observations	208	147	208	208	147	206	113	95	64	83

Notes: The estimation method is OLS, using heteroscedasticity-robust standard errors. Significance levels: *p<0.05; **p<0.01; ***p<0.001.

Table 6 Non-linear effects of executive share ownership on employment

Dependent variables:	**Employment change in Year 1**				**Employment change by the end of Year 3**			
Independent variables:	**Full sample**		**Excluding divestment**		**Full sample**		**Excluding divestment**	
Executive ownership	0.200**	- 0.310	0.262**	0.018	0.121*	0.065	0.202**	0.184
Squared executive ownership		0.264*		0.279		0.090		0.020
All other control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-statistic	4.15***	5.56***	3.38***	4.23***	4.05***	6.26***	3.97***	4.24***
Adjusted R squared	0.28	0.28	0.21	0.22	0.15	0.13	0.14	0.14
Number of observations	235	235	181	181	208	208	147	147

Notes: The estimation method is OLS, using heteroscedasticity-robust standard errors. Significance levels: *p<0.05; **p<0.01; ***p<0.001.

Table 7a Employment change in Year 1: moderating effects on executive share ownership

Dependent variable:	**Employment change in Year 1**									
Conditioning variables:	**Leverage**	**Cash**	**Related**	**Premium**	**Relative emp. size**	**Target ROA**	**Growth**	**Efficiency**	**Vertical**	**Diversifi-cation**
Executive ownership in baseline model	0.200**	0.200**	0.200*	0.200**	0.200**	0.200**	0.161**	0.161**	0.161**	0.161**
Conditioning variable in baseline model	-0.106	-0.104	0.002	0.045	-0.185*	0.184***	0.168	0.003	0.122	-0.105
Executive ownership in conditioned model	0.158*	0.193*	0.271**	0.144	0.156**	0.197***	0.260**	0.197**	0.183**	0.179**
Conditioning variable	-0.099	-0.103	-0.009	0.045	-0.167	0.186***	0.143*	-0.226**	0.069	-0.079
Interaction term	-0.094	0.016	0.088	0.161**	0.106*	0.059	-0.095	-0.164	0.047	0.059*
All other control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-statistic	4.28***	4.02***	4.26***	4.97***	4.11***	4.09***	4.54***	4.46***	4.64***	4.80***
Adjusted R squared	0.28	0.28	0.28	0.30	0.29	0.28	0.29	0.30	0.28	0.28
Number of observations	235	235	235	235	235	235	235	235	235	235

Notes: The estimation method is OLS, using heteroscedasticity-robust standard errors. Significance levels: * p<0.05; ** p<0.01, ***p<0.001.

Baseline models: Table 4 - Model 1 and Model 4

Table 7b Employment change in Year 1: moderating effects on executive share options

Dependent variable:	**Employment change in Year 1**									
Conditioning variables:	**Leverage**	**Cash**	**Related**	**Premium**	**Relative emp. size**	**Target ROA**	**Growth**	**Efficiency**	**Vertical**	**Diversifi-cation**
Executive options in baseline model	- 0.135	- 0.135	- 0.135	- 0.135	- 0.135	- 0.135	0.133	0.133	0.133	0.133
Conditioning variable in baseline model	- 0.106	- 0.104	0.002	0.045	- 0.185*	0.184***	0.168	0.003	0.122	- 0.105
Executive options in conditioned model	- 0.216*	- 0.136	- 0.107	- 0.151*	- 0.049	- 0.167*	- 0.133	- 0.135*	- 0.159	- 0.136
Conditioning variable	- 0.124	- 0.107	0.008	0.042	- 0.200	0.201***	0.147*	- 0.128*	0.064	- 0.085
Interaction term	0.14	0.007	- 0.049	- 0.048	- 0.096	0.120*	0.090	- 0.042	0.027	0.009*
All other control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-statistic	4.81***	4.00***	4.04***	4.00***	4.50***	4.09***	4.06***	4.40***	3.98***	3.93***
Adjusted R squared	0.29	0.28	0.28	0.28	0.28	0.29	0.29	0.29	0.28	0.28
Number of observations	235	235	235	235	235	235	235	235	235	235

Notes: The estimation method is OLS, using heteroscedasticity-robust standard errors. Significance levels: * p<0.05; ** p<0.01, ***p<0.001.

Baseline models: Table 4 - Model 1 and Model 4

Table 8 The role of executive ownership in target selection

	Probit regressions				OLS regressions		
Dependent variables:	**Horizontal growth**		**Horizontal efficiency**			**Target ROA**	**Target Labour Productivity**
Independent variables	**Coefficients**	**Marginal effects**	**Coefficients**	**Marginal effects**			
Executive share ownership	0.026**	0.010**	- 0.057*	- 0.017*		- 0.012	0.130*
Executive share options	- 0.010	- 0.004	- 0.068	- 0.020		0.011	0.114*
Non-executive share ownership	0.051*	0.019*	- 0.007	- 0.002		0.113	0.012
External large combined ownership	0.006	0.002	- 0.008	- 0.002		- 0.121*	0.059
Proportion of non-exec. directors	0.090	0.033	0.701	0.208		0.034	0.033
Relative employment size	- 0.038	- 0.014	0.034	0.01		0.099	- 0.334***
Leverage	0.659	0.243	0.105	0.031		0.083	0.054
Capital intensity	0.017	0.006	0.011	0.003		- 0.088	0.036
Acquirer pre-takeover labour productivity	0.416**	0.154**	- 0.448*	- 0.133*			0.431***
Target pre-takeover labour productivity	- 0.182	- 0.067	0.289	0.086			
Acquirer pre-takeover ROA						0.216	
Horizontal growth						- 0.005	0.065
Horizontal efficiency						- 0.091	0.168
Vertical integration						0.018	0.120
Constant	- 0.887		- 0.548				
Log-likelihood	- 151.32		- 123.51				
Restricted log-likelihood	- 162.27		- 136.62				
Chi-squared	19.17*		22.78*		F-statistic	1.15	5.79***
Pseudo-R-squared	0.07		0.10		Adjusted R-squared	0.04	0.23
Number of observations	235		235			235	235

Notes: The estimation methods are probit and OLS regressions, using heteroscedasticity-robust standard errors. Significance levels: * p<0.05; ** p<0.01, ***p<0.001.

Figure 1 The relationship between executive ownership and employment change: full sample (non-linear)

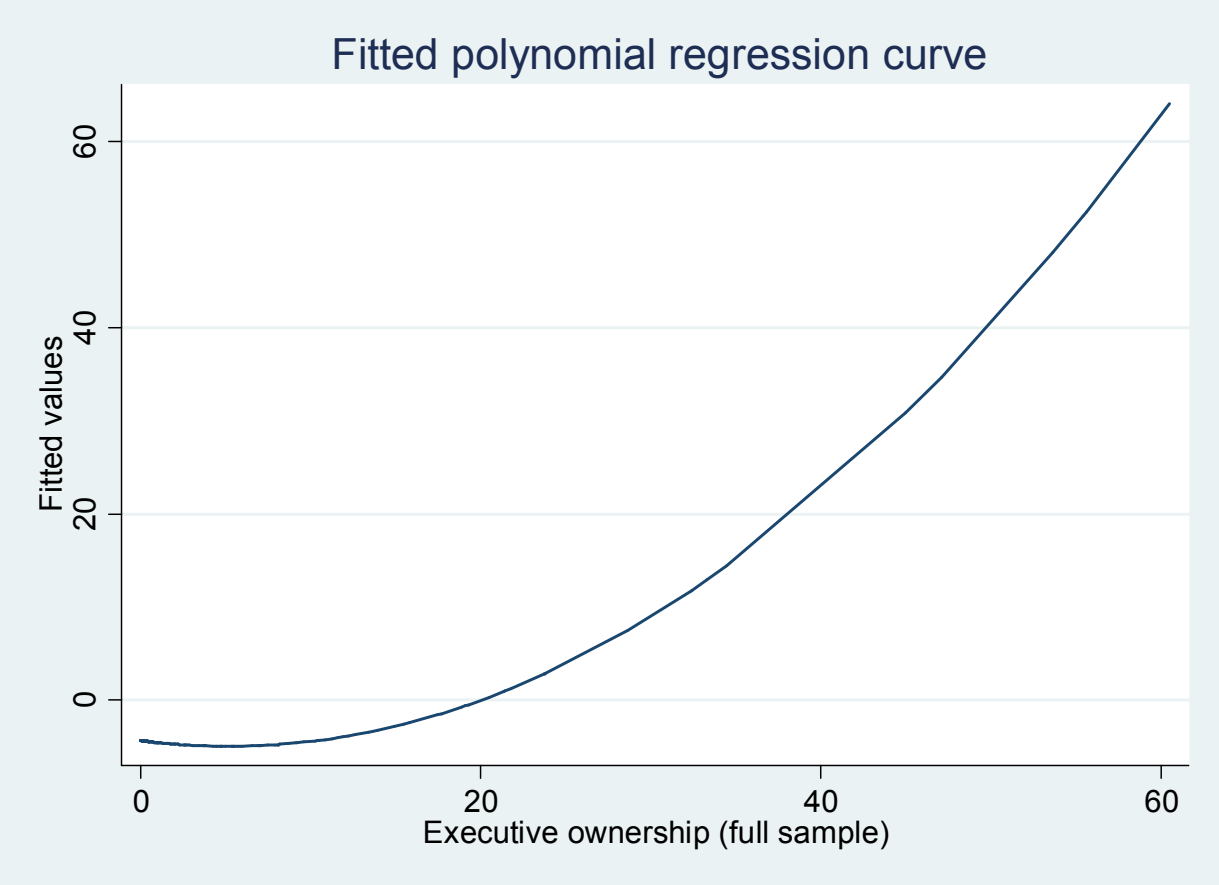
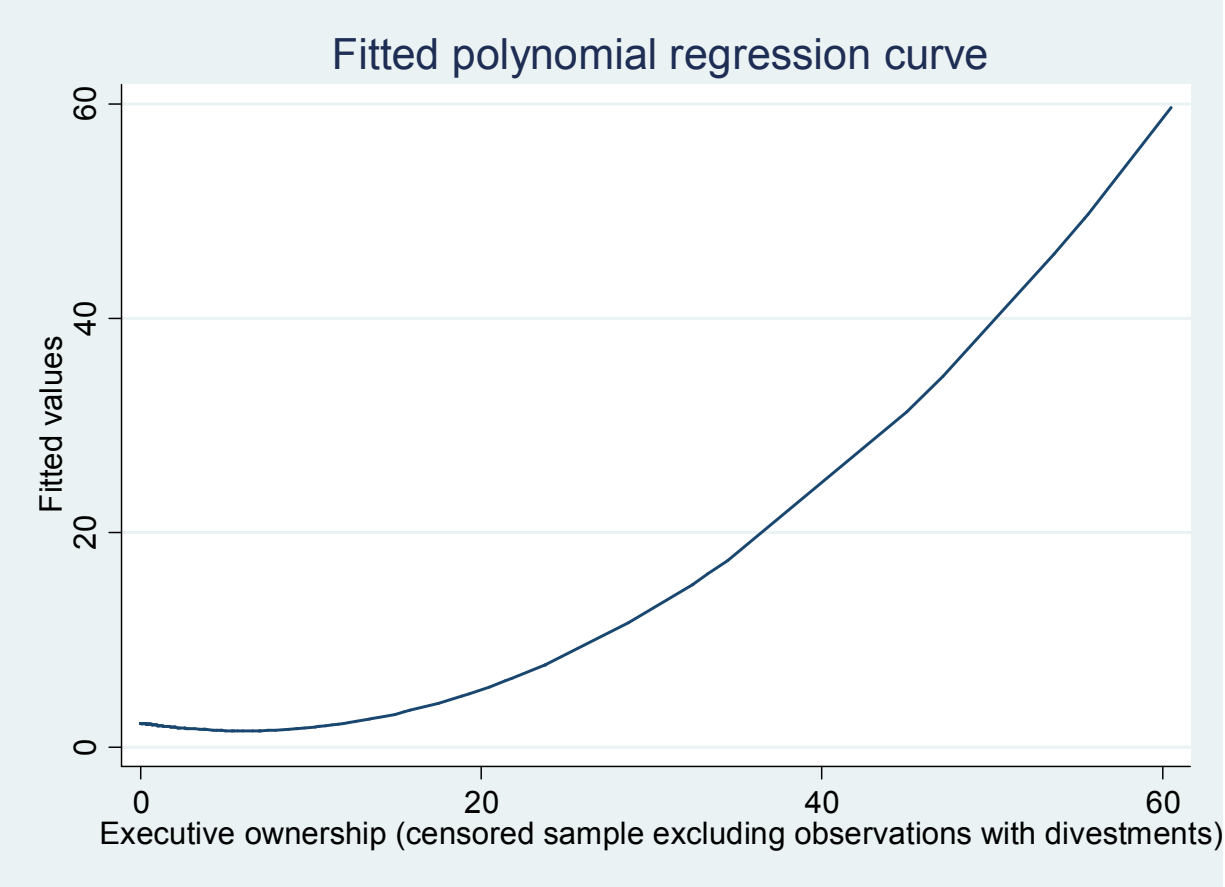


Figure 2 The relationship between executive ownership and employment change: excluding divestment cases (non-linear)



Appendix 1

Definitions of the variables

Variable	Definition	Source	Type
Employee lay-offs	*Employee layoffs* variable takes 1 if the acquirer makes redundant at least 1 per cent of the combined workforce of the acquired and the acquiring firms within a two year period after takeovers (as reported in the press), 0 otherwise.	*Financial Times* and other press reports, downloaded from Nexis® UK	0,1
Employment change in Year 1 (Year 3)	*Employment change in Year 1 (Year 3)* variable indicates a percentage employment change, measured as the difference between the pre-takeover combined employment of the acquired and the acquiring firm and post-takeover employment of the acquiring firm in Year 1 (Year 3), divided by the average of pre- and post-takeover employment. Pre-takeover pro-forma employment is constructed by combining the number of workers of the acquired and the acquiring firm in the year immediately before takeover completion year. Post-takeover employment indicates the number of workers of the acquiring firm in Year 1 (Year 3). The acquired and acquiring firm employment represents the annual average number of both full and part time workers, employed by the firms during the year, as reported in company annual reports.	*Datastream* and Company Annual Reports	%
Executive share ownership	*Executive share ownership* variable indicates the total number of shares owned by the acquirer's executive directors, including CEO, and their immediate family members, divided by the acquirer's total number of shares in issue at the end of accounting year immediately prior to takeover completion year.	*Hambro Company Guide, Price Waterhouse Corporate Register,* Company Annual Reports	%
Executive share options	*Executive share options* variable indicates the total number of shares awarded to the executive directors under executive share option schemes divided by the acquirer's total number of shares in issue at the end of accounting year immediately prior to takeover completion year.	As above	%
Non-executive ownership	*Non-executive ownership* variable indicates the total number of shares owned by the acquirer's non-executive directors and their immediate family members, divided by the acquirer's total number of shares in issue at the end of accounting year immediately prior to takeover.	As above	%
External largest single owner	*External largest single owner* variable is measured as the percentage of ownership of the largest institutional or non-institutional non-board shareholder with ownership larger than 3 per cent of ordinary shares.	As above	%
External large combined ownership	*External large combined ownership* variable is measured as the percentage of ownership of all institutional and non-institutional non-board shareholdings with ownership larger than 3 per cent of the acquirer's ordinary shares.	As above	%
Proportion of non-executive directors	*Proportion of non-executive directors* variable is defined as the ratio of non-executive directors to the total board size.	As above	%
Related acquisitions	*Related acquisitions* variable takes 1 if both acquired and acquiring firms are in the same industry, defined on the basis of *Datastream* Industrial Classification Benchmark Level Four, 0 otherwise.	*Datastream*	0,1
Diversification	*Diversification* variable takes 1 if a M&A deal is undertaken by a conglomerate acquirer, whose managers indicate business diversification as the main objective of the deal (as reported in the press), 0 otherwise.	*Financial Times*	0,1
Horizontal growth	*Horizontal growth* variable takes 1 if a M&A deal involves acquiring a rival firm and the acquiring firm managers indicate business growth and expansion as the main objective of the deal (as reported in the press), 0 otherwise.	*Financial Times*	0,1
Horizontal efficiency	*Horizontal efficiency* variable takes 1 if the acquiring firm managers specifically indicate rationalisation, cost savings and other required improvements in the targeted firm as the main objective of the takeover transaction (as reported in the press), 0 otherwise.	*Financial Times*	0,1

Vertical integration	*Vertical integration* variable takes 1 if a M&A deal involves two firms where there is some type of business relationship between them, such as supplier or customer (as reported in the press), 0 otherwise.	*Financial Times*	0,1
Relative employment size	*Relative employment size* variable is the ratio of the acquired firm employment to the acquiring firm employment during the year immediately prior to acquisition completion year. This ratio is log transformed.	*Datastream*	Continous
Hostile acquisitions	*Hostile acquisitions* takes variable 1 if an acquisition is defined as an hostile transaction by *Acquisitions Monthly*, 0 otherwise.	*Acquisitions Monthly, Financial Times*	0,1
Premium	*Premium* is the difference between the purchase price and the target firm share price 30 days before takeover announcement date, divided by the target firm share price 30 days before takeover announcement date.	*Acquisitions Monthly*	%
Cash-paid acquisitions	*Cash-paid acquisitions* variable takes 1 if an acquisition was financed with 100 per cent cash, 0 otherwise.	*Acquisitions Monthly*	0,1
Leverage	*Leverage* is the ratio of the acquirer's total debt to its total assets at the end of the takeover completion year.	*Datastream*	%
Capital intensity	*Capital intensity* is the ratio of combined fixed asset values, expressed in real terms (2003 pounds sterling), of the acquired and acquiring firm at the end of the pre-takeover year to the combined workforce of the acquired and acquiring firm employed during that year. This ratio is log transformed.	*Datastream*	Continuous
Divestments in Year 1 (Year 3)	*Divestments in Year 1 (Year 3)* variable takes 1 if the acquirer makes significant asset divestment by the end of Year 1 (Year 3), as reported in the press, 0 otherwise.	*Financial Times*	0,1
Control firm employment change in Year 1 (Year 3)	*Control firm employment change in Year 1 (Year3)* is measured as the average change in employment of the two matched firms (matched acquired firms and matched acquirer) from pre-takeover period to the first (third) post-takeover year, divided by the average of their pre- and post-takeover employment.	Computed based on *Datastream* data	%
Pre-takeover Target (Acquirer) ROA	*Pre-takeover Target (Acquirer) Return on Assets (ROA)* is computed as Earnings Before Interest, Taxes and Depreciation (EBITDA) for a year divided by the book value of Total Assets at the beginning of the year. This performance measure is then adjusted by industry performance by subtracting from it the respective industry median ROA. Median measure of three pre-takeover years ROA is used.	As above	%
Post-takeover Acquirer ROA in Year 1 (Year 3)	*Post-takeover Acquirer Return on Assets (ROA) in Year 1 (Year 3)* is computed as Earnings Before Interest, Taxes and Depreciation (EBITDA) for the first (third) year after the takeover completion year divided by the book value of Total Assets at the beginning of that year. This performance measure is then adjusted by industry performance by subtracting from it the respective industry median ROA.	As above	%
Pre-takeover Target (Acquirer) Labour Productivity	*Pre-takeover Target (Acquirer) Labour Productivity* is measured as sales per employee, using data from the year immediately before the takeover completion year. This labour productivity measure is then normalised using the industry median labour productivity for the same period and log transformed.	As above	Continuous
Pre-takeover Target (Acquirer) Average Wage	*Pre-takeover Target (Acquirer) Average Wage* variable is the ratio of annual total staff costs in real terms (2003 pounds sterling) of the firm during the year immediately before takeover to the number of workers, employed by the firm during that year. This average wage measure is then scaled with the industry median wage for the same period and log transformed.	As above	Continuous

Appendix 2
Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1	1																															
2	-0.39*	1																														
3	-0.33*	0.72*	1																													
4	-0.25*	0.24*	0.17*	1																												
5	0.02	-0.16*	-0.07	0.03	1																											
6	-0.04	0.02	0.00	0.08	0.23*	1																										
7	-0.02	0.00	0.05	-0.07	0.11	0.14*	1																									
8	-0.08	-0.07	0.02	-0.08	0.14*	0.13*	0.76*																									
9	-0.05	-0.04	-0.06	-0.19*	-0.25*	0.10	0.16*	0.12	1																							
10	-0.06	0.02	0.06	0.00	-0.03	0.12	-0.12	-0.01	0.11	1																						
11	-0.34*	0.22*	0.28*	0.18*	0.01	0.13	-0.01	0.07	0.00	0.48*	1																					
12	0.37*	-0.22*	-0.19*	-0.20*	-0.08	-0.05	0.04	-0.08	0.13*	0.02	-0.56*	1																				
13	-0.02	0.09	-0.03	0.02	0.07	-0.05	0.00	-0.03	-0.15*	-0.39*	-0.40*	-0.26*	1																			
14	0.02	-0.14*	-0.13	-0.02	0.02	-0.08	-0.05	0.03	-0.01	-0.35*	-0.33*	-0.21*	-0.15*	1																		
15	0.18*	-0.15*	-0.10	0.14*	0.18*	0.05	0.15*	0.23*	0.04	-0.08	0.05	-0.07	-0.10	0.13*	1																	
16	0.14*	-0.16*	-0.06	-0.01	0.08	0.08	0.07	-0.01	0.06	-0.03	-0.08	0.07	0.02	0.01	0.10	1																
17	-0.02	0.0473	0.04	0.02	-0.03	0.05	-0.02	-0.04	0.01	0.10	0.09	-0.03	-0.04	-0.05	-0.09	0.22*	1															
18	0.09	-0.08	-0.03	-0.10	-0.13*	-0.05	-0.11	-0.16*	0.00	0.02	-0.09	0.08	-0.04	0.07	-0.41*	0.02	0.02	1														
19	0.22*	-0.16*	-0.24*	-0.17*	0.05	0.01	0.00	0.04	0.00	0.15*	0.06	0.05	-0.22*	0.08	0.05	0.07	-0.06	-0.03	1													
20	0.03	-0.10	0.02	-0.14*	-0.01	-0.05	0.10	0.00	0.17*	0.09	0.01	0.06	-0.08	-0.01	0.05	0.12	-0.11	-0.02	0.21*	1												
21	0.36*	-0.37*	-0.32*	-0.15*	-0.03	-0.09	-0.04	-0.09	0.11	-0.13*	-0.26*	0.24*	0.01	0.07	0.18*	0.15*	0.04	0.10	0.12	0.10	1											
22	0.41*	-0.38*	-0.35*	-0.18*	0.09	-0.04	0.02	-0.04	0.08	-0.15*	-0.29*	0.26*	0.07	0.02	0.13	0.19*	0.06	0.10	0.11	0.04	0.87*	1										
23	-0.06	0.20*	0.13*	-0.02	0.00	-0.04	-0.04	-0.01	0.00	-0.09	0.04	-0.10	-0.02	0.11	0.05	-0.17*	-0.17*	-0.15*	-0.03	-0.04	-0.15*	-0.13*	1									
24	-0.06	0.03	0.09	0.02	0.03	-0.01	-0.13*	-0.08	-0.06	0.05	0.08	-0.04	-0.08	0.02	0.10	-0.09	-0.14*	-0.18*	-0.02	0.10	-0.07	-0.05	0.61*	1								
25	-0.11	0.22*	0.14*	0.00	0.01	0.09	-0.11	-0.08	0.01	0.00	0.06	-0.09	0.01	0.03	0.05	-0.15*	0.01	-0.06	0.04	-0.08	-0.06	-0.11	0.10	0.05	1							
26	-0.15*	0.23*	0.20*	-0.14*	-0.14*	-0.11	-0.12	-0.04	0.01	0.00	0.02	0.01	-0.03	-0.01	-0.15*	-0.13	-0.04	-0.07	-0.07	-0.03	-0.17*	-0.17*	0.16*	0.10	0.19*	1						
27	-0.18*	0.25*	0.32*	-0.10	-0.01	-0.02	-0.04	-0.05	0.04	0.07	-0.01	-0.01	0.07	-0.05	-0.07	0.00	0.06	0.02	-0.29*	0.03	-0.09	-0.13*	-0.01	-0.01	0.16*	0.39*	1					
28	-0.08	0.03	0.15*	-0.09	0.07	-0.06	-0.08	-0.11	0.01	0.08	-0.05	0.08	-0.02	-0.01	-0.09	0.06	-0.12	0.12	-0.06	0.14*	0.03	0.00	0.02	0.08	0.12	0.22*	0.40*	1				
29	0.03	0.04	0.04	0.06	0.00	-0.01	0.02	-0.06	-0.02	-0.03	0.00	0.05	0.03	-0.11	-0.26*	-0.05	-0.04	0.04	0.02	0.05	-0.07	-0.06	0.06	0.00	0.00	-0.04	-0.03	0.03	1			
30	0.00	0.05	0.05	0.04	-0.14*	-0.12	-0.06	-0.09	-0.01	-0.02	0.14*	-0.10	-0.08	0.02	0.07	-0.05	0.00	0.07	0.01	0.07	-0.05	-0.10	0.18*	0.12	0.08	0.05	0.02	0.10	0.37*	1		
31	0.02	-0.10	-0.03	0.00	0.01	0.03	0.03	-0.04	0.04	-0.04	-0.05	0.12	-0.07	-0.01	-0.22*	-0.10	-0.07	0.02	-0.07	0.15*	-0.07	-0.08	-0.06	-0.04	0.01	0.08	0.03	-0.02	0.57*	0.13*	1	
32	0.02	0.03	0.06	0.05	-0.06	-0.07	-0.10	-0.12	0.03	-0.08	0.01	0.05	-0.06	-0.02	0.10	-0.05	0.00	0.10	-0.10	0.12	-0.07	-0.11	0.04	0.07	0.02	0.07	0.13	0.06	0.21*	0.60*	0.33*	1

Notes: * indicates significance at p<0.05 or better level. Appendix 1 provides the definitions of the variables.

1. Employee layoffs; 2. Employment change in Year 1; 3. Employment change by the end of Year 3; 4. Executive share ownership; 5. Executive share options; 6. Non-executive ownership; 7. External largest single owner; 8. External large combined ownership; 9. Proportion of non-executive directors; 10. Related acquisitions; 11. Diversification; 12. Horizontal growth; 13. Horizontal efficiency; 14. Vertical integration; 15. Relative employment size; 16. Hostile acquisitions. 17. Premium; 18. Cash-paid acquisitions; 19. Leverage; 20. Capital intensity; 21. Divestments in Year 1; 22. Divestments in Year 3; 23. Control firm employment change in Year 1; 24.Control firm employment change in Year 3; 25. Pre-takeover Target ROA; 26. Pre-takeover Acquirer ROA; 27. Post-takeover Acquirer ROA in Year 1; 28. Post-takeover Acquirer ROA in Year 3; 29. Pre-takeover Target Labour Productivity; 30. Pre-takeover Acquirer Labour Productivity; 31. Pre-takeover Target Average Wage; 32. Pre-takeover Acquirer Average Wage.

Appendix 3

Panel A: Full sample

	Estimated workforce change in Year 1	Estimated workforce change by the end of Year 3
Sample Average Treatment effect on the Treated (SATT) coefficient	-0.012	-0.003
Matching covariates	Yes	Yes
Number of matches for each acquirer	4	4
Total number of acquirers	235	206
Total number of matched control firms	470	470

Panel B: Censored sample excluding observations with divestment

	Estimated workforce change in Year 1	Estimated workforce change by the end of Year 3
Sample Average Treatment effect on the Treated (SATT) coefficient	0.044	0.109**
Covariates	Yes	Yes
Number of matches for each acquirer	4	4
Total number of acquirers	181	146
Total number of matched control firms	470	470

Notes: The estimation method is Average Treatment Effect on the Treated (Wooldridge, 2002), using heteroscedasticity-robust standard errors. Matching covariates include pre-takeover size (employment), prior performance, capital intensity, wage and industry. Significance level: ** $p<0.01$.

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Notes:

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[i] This follows the conventions in the Finance literatures. Financial and property companies are excluded because they are subject to different accounting requirements. Utilities are subject to special regulatory regimes, including the regulation of takeovers.

[ii] 8 of the 11 sectors not present are those have been excluded by the sampling criteria (finance, property, and utilities). The three other sectors are alternative energy, forestry and paper, and tobacco. There were no takeovers in alternative energy in the 1990s.

[iii] Other sources used include the *Times and Sunday Times, Guardian, Independent, Lloyd's List, and the Observer.*

[iv] In these acquisitions on average 7.82% (median =6.06%) of the combined workforce was reported to be laid off.

[v] If *Datastream* stops providing data on an acquirer and if we could not find the relevant annual reports, we assume that this acquirer was taken over by another company or had become bankrupt. As a result, the number of observations decline during the second and third years.

[vi] Cadbury required that a majority of non-executives be independent ie. There is no evidence of a business relationship with the company or its top executives within five years of appointment

[vii] Each researcher independently classified the takeovers according to these criteria, and then jointly agreed the classification.

[viii] The one month premium is used to control for the effect of rumours about takeovers on the target firm share price and to determine the true size of the premium paid to target firm shareholders. Acquirers paid on average a premium of 38.57 per cent for their targets, similar to that reported in other UK studies (Sudarsanam and Sorwar 2010).

[ix] We also compute employee-weighted average employment change, which gives more weight to the observations with larger combined workforce of the target and the acquiring firm. These employee-weighted average change computations show that takeovers reduce workforce 3 per cent by the end of Year 1 and 10 per cent by the end of Year 3.

[x] That ROA in the acquirer becomes significantly negative in this specification suggests that these large-scale rationalisations occur in takeovers mounted by companies that are themselves under-performers.

[xi] To clarify the nature of this relationship we experimented with a number of alternative specifications including the employment size of both target and acquirer. We found that target firm employment size significantly affects the probability of lay-offs, but acquirer employment size is always insignificant when inserted on its own. It becomes significantly negative, however, in conjunction with target employment size. These findings suggest that acquisitions of larger firms have a higher probability of lay-offs and employment reductions, especially where the size differential between acquirer and target is relatively smaller. Executive share ownership continues to be significant in these specifications, with the magnitude of coefficients little changed.

[xii] The *Proportion of non-executive directors* is not significant in Model 3, where the role of stock options is tested. The correlation matrix shows a significant negative inverse correlation between stock options and the proportion of executive directors. These two instruments may be governance substitutes for each other.

[xiii] Ideally, tests for endogeneity would incorporate two-stage selection or instrumental variables approaches. However, our dataset, in which all companies either undergo or mount takeovers, is not suited to this approach.