Do cross-border acquisitions cause convergence in executive compensation? Evidence from U.K. acquisitions of U.S. targets

Paul Guest *

Abstract

We examine the impact of cross-border acquisitions of U.S. targets on the executive pay of the foreign acquirer. In particular, we examine the level of cash compensation and its sensitivity to performance for the highest paid director of U.K. acquirers. We find that acquisitions of U.S. targets result in significantly greater compensation increases than acquisitions of domestic targets or cross-border targets outside the US. However, we find no evidence of greater pay-performance sensitivity following U.S. acquisitions. Our results are consistent with the argument that cross-border acquisitions of U.S. targets do cause convergence in international pay levels, but not pay-performance sensitivities.

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Keywords: Executive compensation; Mergers and acquisitions; Convergence; U.S. targets; Cross-border

* Centre for Business Research, Judge Business School, University of Cambridge, Trumpington Street, Cambridge CB2 1AG, U.K. Tel.: (+44) 01223-338185. E-mail address: pmg20@jbs.cam.ac.uk.

1. Introduction

Acquisitions of U.S. firms over the 1980s and 1990s included a higher proportion of foreign acquirers than ever before (UNCTAD, 2000). Some of these mergers, such as Daimler-Chrysler, BP-Amoco, and Vodafone-AirTouch, highlighted very important international differences in executive pay policies between foreign acquirers and their U.S. targets. Relative to most other countries, U.S. executive compensation levels are very high and closely tied to performance. These international differences have a potentially very important impact on the post-acquisition level and structure of executive compensation of foreign acquirers.

There is anecdotal evidence of large increases in foreign acquirer executive compensation following cross-border U.S. acquisitions. CEOs of acquiring firms have experienced large increases in their compensation. For example, following the cross-border acquisitions of Mannesmann and AirTouch by Vodafone in 2000, Vodafone CEO Chris Gent was awarded a £10m special bonus. In its defence of the bonus payment, Vodafone argued that its executives were poorly paid compared with those in America, and should be entitled to "catch up" payments.[1] There have also been substantial pay increases associated with maintaining the much higher pre-acquisition compensation of U.S. target directors who are subsequently employed by the acquirer following acquisition. For example, following the Daimler-Chrysler and BP-Amoco mergers, executives from the target firms continued to earn pre-merger pay levels as directors on the acquiring company board.[2]

If such increases in compensation following U.S. acquisitions are widespread, there are important implications. Firstly, cross-border acquisitions of U.S. targets may lead to a convergence in international corporate pay systems towards U.S. norms (Murphy, 1999; Cheffins and Thomas, 2004). Secondly, if acquisitions of U.S. targets result in higher compensation for existing CEOs regardless of performance effects, then this potentially has important implications for the motivation of cross-border acquisitions in the U.S. The empirical

[1] "Vodafone's Folly", *The Economist*, July 15, 2000, pp. 20-21.

evidence of the performance effects of cross-border acquisitions shows that cross-border deals underperform domestic ones[3] and this apparent divergence between compensation and performance effects warrants a closer look at the relationship between cross-border acquisitions and executive pay. Executive pay increases following cross-border acquisitions could be consistent with executive compensation rewarding managerial skill in carrying out value enhancing cross-border acquisitions. However, if managers experience higher compensation gains from cross-border acquisitions, irrespective of performance impacts, distorted incentives to make cross-border acquisitions may exist.

In this paper we empirically examine the impact of U.S. acquisitions by U.K. acquirers on the cash compensation of the highest paid director of the acquiring firms. Our sample of U.K. acquirers provides the most appropriate setting to examine this topic for several reasons. Firstly, U.K. acquirers were by far the most active acquirers of U.S. targets, either in terms of number or value, over the 1980s and 1990s. Secondly, U.K. firms have significantly lower pay levels and a significantly lower pay-performance link compared to U.S. firms. Thirdly, relative to other countries which carry out a large number of U.S. acquisitions, information on executive pay is more readily available in the U.K. over our sample period. Lastly, relative to other countries the U.K. is very similar to the U.S. in other aspects of its corporate governance system (i.e., minority shareholder protection). It therefore provides the most comparable set of data to the U.S., and U.K. firms above all others are most likely to experience a convergence to U.S. pay norms.

We examine the compensation effects of a sample of over 487 acquisitions of U.S. targets (public and private) over the period 1985-1998 by U.K. public acquirers. We compare and contrast these effects with a sample of 2,614 domestic acquisitions and over 502 other cross-border (non-US) acquisitions. We find that acquisitions of U.S. targets result in significantly greater compensation increases than acquisitions of domestic targets or cross-border targets

[2] On DaimlerChrysler see: "DaimlerChrysler Pay Scale To Lean Toward US", *The Wall Street Journal*, August 7, 1998, page A3. On BP-Amoco see: BP-Amoco Annual Report 1998.
[3] On the performance of U.K. acquirers see Conn et al., (2005), and for U.S. acquirers see Moeller et al., (2005).

outside the US. However, we find no evidence of greater pay-performance sensitivity following U.S. acquisitions. Despite finding evidence of a significantly higher increase in pay levels following U.S. acquisitions, we find no evidence that these pay increases are linked to the common explanations given for such increases.

This paper contributes to three existing literatures. Firstly, it contributes to the debate on convergence in executive pay systems (Murphy, 1999; Cheffins and Thomas, 2004), by examining a precise mechanism by which different systems are argued to converge. Testing whether cross-border acquisitions of U.S. targets result on average in higher compensation gains than other cross-border acquisitions will provide important evidence on the strength of this particular determinant of convergence. Secondly, although a number of studies in both the U.S. and U.K. have examined the effect of domestic acquisitions on executive pay (reviewed in Section 2 below), none have examined the impact of cross-border acquisitions. Given the large amount of cross-border acquisition activity, previous literature is clearly only examining one aspect of total takeover activity. To the extent that differences exist between domestic and cross-border acquisitions, the generality of previous findings may be questionable. Lastly, this paper contributes to the literature on multinationality and executive pay (reviewed in Section 2.3 below), which does not distinguish between the different forms of geographic expansion, or whether the expansion is value creative or not.

The paper proceeds as follows: Section 2 provides a review of the literature and presents the main research hypotheses. Section 3 describes the data and variable formation. In Section 4 we present the empirical results. Section 5 concludes.

2. Literature review and research hypotheses

In this Section we provide a review of the literature and present the main research hypotheses. In Section 2.1 we carry out a review of the literature on firm size and compensation. In Section 2.2 we review the findings of previous empirical studies on mergers and executive compensation. Finally, in Section 2.3 we examine the impact of multinationality on executive pay, international differences in executive pay, and present the main research hypotheses.

2.1. Firm size and compensation

There is a large empirical literature on the determinants of executive pay, which is reviewed thoroughly by Murphy (1999). The empirical results that have received the most attention are the relationships between executive pay and performance, and executive pay and size. The statistical relationship between executive compensation and firm performance is positive although small, weak and sensitive to methodology used. Most studies report substantially larger elasticities for accounting rates of return than for stock market performance variables. A large theoretical literature based on principal-agent theory shows how to account for the moral hazard problem when designing the compensation contract and predicts that pay will be determined by performance. The positive connection between compensation and firm size has a long and consistent history and various explanations have been put forward to explain it (Rosen, 1992). For example, complexity increases with size, and the management of complex organizations places great demands on the executive requiring more skill and experience than does the management of simpler organizations, which leads to a compensation premium.[4] Labor market theory suggests that the size-pay relation is the outcome of matching more talented executives with larger firms in which their managerial product is maximized. Alternatively, tournament theory suggests that compensation can be used to motivate effort among lower-level managers who view the top job as spoils that go to the winner of an intra-firm tournament. A bigger firm represents a larger tournament, and therefore demands a commensurate prize.

These explanations for the correlation between compensation and size imply that making a firm larger by acquisition could increase the compensation of an existing manager, regardless of whether the acquisition creates value or not. This could be because the new firm or the merger integration process is more complex and requires more work. The acquiring firm's CEO must identify and realize sources of potential cost savings and revenue enhancements, restructure assets, and reconfigure the organization. None of these changes or the requisite decisions will

[4] Rose and Shepard (1997) and Berry et al., (2005) find that salaries of CEOs of diversified firms are larger than those of similarly-sized but less-diversified firms. Based on additional evidence they infer that this relation is due to greater task complexity and higher managerial product for the diversified firms.

occur by themselves; managerial effort must be expended and managerial discretion and skill must be carefully exercised (Demsetz, 1995). Since there is evidence to suggest that a majority of takeovers do not on average benefit acquirer shareholders,[5] this has led many authors to argue that acquisitions are carried out to increase size in an attempt to increase compensation (see, e.g., Jensen, 1986), and has been the starting point for the majority of studies that have examined the impact of takeovers on executive compensation.

2.2. Acquisitions and compensation

A number of U.S. and U.K. studies have examined the impact of acquisitions on executive pay. In this section we review the key findings of these studies.

The first conclusion one can draw from these studies is that acquisitions on average result in an increase in the executive compensation of the acquiring firm. Khorana and Zenner (1998) examine a sample of 27 U.S. acquirers over 1982-1986. They find that average cash compensation increases from $344,000 in the year prior to acquisition to $502,000 in the year following acquisition, whilst stock-based compensation increases from $134,000 to $327,000. These changes are much larger than those for non-merging control firms. The authors note that there appears to be no substitution effect between cash and stock compensation changes following acquisition, and that increases in each are correlated with one another. Bliss and Rosen (2001) examine a sample of 16 merger active U.S. banks over 1986-1995, and find that annual cash compensation growth is 12%, significantly higher than that for less merger active banks (7.7%). Anderson et al., (2002) examine a sample of 97 U.S. bank mergers between 1990 and 1997, and find that CEO cash compensation increases from $1,361,000 in the year prior to acquisition to $1,792,000 in the year following acquisition, whilst total compensation increases from $2,646,000 to $4,023,000. Girma et al., (2005a) find that for a sample of UK acquisitions over 1981-96, CEO compensation is £53,000 prior to acquisition and £111,000 following acquisition, whilst the growth rate in CEO compensation increases from 9% to 11%. Harford and Li (2005) examine a examine a sample of 370 U.S. mergers between 1993 and 2000, and

[5] For reviews see Hughes (1989), Agrawal and Jaffe (2002), and Bruner (2003).

find that CEO median cash compensation increases from $1,144,000 in the year prior to acquisition to $1,167,000 in the year following acquisition, whilst total compensation increases from $2,449,000 to $3,464,000. Grinstein and Hribar (2004) find that 39% of acquiring firms state that they compensate CEOs for acquisitions, and that the compensation comes mainly in the form of a cash bonus. In summary, these studies suggest that companies carrying out acquisitions are, on average, rewarded with higher compensation both in terms of cash and stock based compensation.

Given the strong empirical finding between sales and compensation, and given that acquisition increases the size of the acquirer, one may perhaps expect the increase in compensation following acquisition reported above. Therefore many studies have examined whether the increase in compensation is greater than or less than that expected given the increase in size. Firth (1991), Conyon and Gregg (1994), Khorana and Zenner (1998), and Girma et al. (2005a) find that acquirers experience a significantly higher change in compensation after controlling for changes in size. In contrast, Avery et al. (1998), Bliss and Rosen (2001), Anderson et al., (2002), and Harford and Li (2005) find no evidence that mergers increase compensation once increase in sales has been controlled for. In summary, evidence on whether the increases in executive pay arising from acquisition are greater than those from internal growth is mixed.

Many studies have examined whether it is only those deals which are successful that result in higher compensation. The latter is usually measured by abnormal returns over the announcement window. Lambert and Larcker (1987), Khorana and Zenner (1998), and Girma et al. (2005) show that wealth destructive acquirers do not experience a significant increase in compensation, whereas wealth enhancing acquirers do, and the difference between the two is significant. Anderson et al., (2002) find that both types of acquirer experience a significant increase, but that good acquirers experience a larger increase. In contrast, Firth (1991), Avery et al. (1998), and Bliss and Rosen (2001) find that both types resulted in a significantly positive impact and that there is no significant difference between the two. Harford and Li (2005) find no significant

difference between the two. Similarly, Grinstein and Hribar (2004) show there is no positive relation between M&A bonus compensation and short run abnormal returns. Therefore the evidence on whether the change in compensation depends upon the success of the acquisition is mixed.[6]

If wealth destructive acquisitions result in positive compensation effects, as frequently appears the case, then this appears to be a manifestation of agency problems. Consequently, some studies have examined how the compensation effects vary with measures of managerial power. Grinstein and Hribar (2004) show that CEOs receive significantly larger cash bonuses when the CEO is also the chairman and when the CEO also sits on the nominating committee. In contrast, Anderson et al. (2002), find no evidence that increases in compensation are linked to either the stock ownership or tenure of the CEO. A number of other studies have examined whether the link between compensation and acquisition performance differs according to board power. Kroll et al., (1990) examine a sample of 50 acquisitions by U.S. acquirers between 1979-86, and show that cash compensation changes are only linked to acquisition performance when either a large external blockholder or the management owns a large stake in the acquirer. In other cases, compensation effects are not related to acquisition performance. Kroll et al., (1997) find the same result, examining a sample of 209 acquisitions by U.S. acquirers between 1982-91. Wright et al., (2002) examine a sample of 171 acquisitions by U.S. acquirers between 1993-1998 and show that cash compensation changes are only linked to acquisition performance when there is vigilant monitoring of the acquirer in the form of both high analyst following and institutional investor presence. Therefore, there is some evidence that compensation changes are both lower and more closely tied to acquisition performance when manager power is lower.

[6] The finding that pay increases regardless of wealth creation does not establish that current compensation practices are suboptimal. Such correlation might be produced by boards following the advice of compensation consultants urging compensation levels equal to (or exceeding) those at other companies with a similar market capitalization. However, such a correlation might also result from optimal contracting by boards and managers. For example, the experience obtained from running a larger firm might improve the manager's outside options and thus require a pay raise to retain the manager. Thus, even though a connection between ex post compensation and larger size might distort managers' ex ante choices, having such a connection might be necessary or optimal overall.

Some studies have examined whether the increase in compensation is offset by the negative impact of the abnormal return on the CEOs stock ownership and hence whether CEOs actually experience an increase in overall wealth. Lambert and Larcker (1987) find that for wealth destroying acquisitions, the effect on CEO compensation is insignificantly positive whilst the effect on CEO wealth is negative although not significantly so. In contrast, Firth (1991) finds that even with wealth destroying acquisitions, the highest paid director of acquirers significantly increases her wealth. Bliss and Rosen (2001) find that 77% of CEOs had an increase in total wealth, despite the average CAR being negative.

Given the above finding that even wealth destructive acquisitions can increase CEO compensation and wealth, a small number of studies have directly examined the impact of compensation on acquisition probability. Khorana and Zenner (1998) find that acquirers have a relatively strong pay-sales link prior to acquisition, but that this disappears following acquisition. They interpret this as suggesting that the strong link encouraged acquirers to make the acquisition. Rosen (2005) finds that acquirers who have started a merger program and are paid above normal, are more likely to make further acquisitions. There is therefore some evidence that compensation levels and structure do effect motivations for acquisition.

Two studies have examined the effect of acquisition on the pay-performance link, something of particular interest to our study. Conyon and Gregg (1994) find no evidence that pay is more or less closely linked to shareholder returns following acquisition. However, Harford and Li (2005) find that the link between pay and poor performance (share returns) is significantly weakened following acquisition. However, this only holds when the acquirer has a weak board, defined by the long length of CEO tenure.

None of the above studies differentiate sample acquisitions according to the type of acquisition or the characteristics of the target company, and in particular by national geographical location. A number of studies do however examine whether diversifying acquisitions and non-diversifying acquisitions have a different impact on compensation changes.

However, the studies by Avery et al., (1998), Khorana and Zenner (1998), Bliss and Rosen (2001), and Anderson et al., (2002) find no difference between these different acquisition types.

In summary, previous studies examining the effect of acquisitions on executive compensation show that acquisitions have a large positive impact on compensation. This increase appears similar or somewhat larger than that expected given the increase in size associated with acquisition. The increase in compensation does not appear strongly linked to acquisition performance and acquirers appear to experience an increase even if the acquisition destroys shareholder value. There is some evidence that board power leads to larger compensation effects and a weaker link with acquisition performance.

2.3. International pay differences and cross-border acquisitions

Our focus in this paper differs from the studies reviewed in Section 2.2, none of which has examined the impact of cross-border acquisitions on executive compensation. Our primary interest is the effect of the national differences that exist in the levels of executive compensation and the relation between pay and performance In particular, we are interested in the significant differences that exist between executive compensation in the U.S. and in most other countries. U.S. pay is significantly higher, bonus payments account for a higher proportion of cash compensation, there is a higher level of incentive holdings, and overall therefore a much stronger link between pay and performance (see, e.g., Abowd and Bognanno, 1995; Murphy, 1999; Conyon and Murphy, 2000). Comparisons between the U.S. and other countries in terms of levels of pay and proportions of performance pay are shown for 1999 in Fig. 1 below. A large pay gap clearly exists between American CEOs and those in equivalent positions at foreign firms.

With regard to specific differences with the UK, these were documented in a comparative study of executive compensation between the U.S. and the U.K. by Conyon and Murphy (2000). They surveyed pay arrangements in over 1,600 publicly quoted U.S. corporations and the U.K's largest 510 companies. They found that, as of 1997, U.S. CEOs were paid on average £3,565,000 in total compensation, whereas U.K. CEOs received only £589,000. U.S. CEOs

received a much smaller percentage of their pay in fixed compensation with an average of 29% (£1,033,850) of their pay in the form of base salaries, compared to 59% (£347,510) for U.K. CEOs. The percentage of CEOs receiving bonuses was roughly the same in the two countries. American CEOs' average annual bonuses totaled £606,050, compared to £106,020 for English CEOs. Therefore the link between cash compensation and performance is stronger in the U.S. than the U.K., because bonus forms a larger part of cash compensation (37% versus 23%). With regard to long term incentives, the average American CEO received 42% (£1,497,300) of her total pay in the form of option grants whilst U.K. executives received only 10% (£58,900) of their total compensation in the form of stock options. Long term incentives in the U.K. therefore form a much smaller part of compensation than in the U.S.

It is argued that executive pay in foreign countries including the U.K. will over time converge towards U.S. pay levels structures (Murphy, 1999; Cheffins and Thomas, 2004). With regard to the U.K., there appears to be some evidence of convergence in terms of cash compensation and its link to performance. For example, in 1999, the base pay of British CEOs rose 11%, whilst in the U.S. it rose just 3%. Similarly, bonus levels rose more sharply in Britain than they did in the U.S., which arguably reflects a general trend in Europe of linking cash compensation more closely with performance.[7] However, there has been little evidence of convergence in terms of long term incentives. In contrast to cash compensation which increased dramatically over our sample period, the number of options in U.K. firms decreased over the 1990s (Conyon and Murphy, 2000) and the growth in long term incentives for U.S. firms far outstripped that for U.K. firms. The reasons for convergence in executive pay levels are numerous. Cheffins and Thomas (2004) list evolving share ownership patterns, cross-border hiring, growth of multinationals, and cross-border takeovers as key determinants. It is this latter explanation with which we are primarily interested and which we now explore further.

In cross-border acquisitions of U.S. targets, relative to domestic or other cross-border acquisitions, executive compensation in the acquiring firm is expected to rise higher than in

[7] "Managing Change: Pay for U.K. CEOs Trails U.S", *The Wall Street Journal Europe*, June 6, 2000.

domestic or other cross-border acquisitions for the following reasons. Firstly, U.S. acquisitions may give U.K. executives the American experience necessary to become contenders for top positions at U.S. firms and hence compete for the higher American remuneration packages. In order to keep such managers, these U.K. companies would need to restructure managerial compensation along American lines to compete. Indeed in the UK, significant general increases in executive pay have sometimes been defended on such grounds (Cheffins and Thomas, 2004). Secondly, an important part of the pay setting process in the U.K. is the selection of comparable companies whose pay is used as a benchmark. For example, the Hay Group, an executive compensation consultancy, states that it works on pay benchmarking with 77 of the FTSE 100 in the U.K. In the case of U.S. acquisitions, the companies selected by the U.K. acquiring firms for peer group pay benchmarking may change following acquisition to include higher pay U.S. companies, or to include U.K. companies with a similar U.S. presence. Lastly, if the acquirers' level of pay is lower than that of the acquiree, and if directors of the target firm are subsequently employed by the acquirer, they may be unwilling to accept pay cuts to do so and may demand pre-acquisition pay levels. However, maintaining separate wage scales for acquirer executives and U.S. subsidiary managers could be difficult and interfere with integration of the operations of the combined firms. Post-merger equality in compensation systems may be easier to achieve through pay rises than through pay cuts (Murphy, 1999). Murphy (1999) argues that, "foreign companies acquiring U.S. subsidiaries face huge internal pay inequities, often resolved by increasing home-country executive pay" (p.8). Therefore, in such cases there may be a tendency for the U.K. directors pay levels to gravitate towards U.S. levels following acquisition. The key empirical prediction that emerges is that directors pay in the acquiring firm will increase relatively more following U.S. acquisitions than other acquisitions.

In examining the impact of U.S. acquisitions on executive compensation, the correct counterfactual is not just domestic acquisitions but also cross-border acquisitions in other countries than the U.S. Cross-border acquisitions may have a positive impact on executive pay relative to domestic acquisitions, because expanding the scope of the firm internationally with a

cross-border acquisition may result in a more complex organisation relative to a domestic acquisition. Multinational firms face informational complexities due to geographic dispersion, multiple currencies, high auditing costs, differing legal systems, and cultural and language differences (Duru and Reeb, 2002). The matching theory would predict that multinational firms bid up the compensation of highly skilled executives because their managerial product is higher at such firms. Consistent with this, studies show that CEO pay is positively related to international scope (Persons, 2001; Duru and Reeb, 2002; and Ramcharran, 2002). Making a cross-border acquisition may increase the compensation of an existing manager, by confirming the multinational talent of the manager and putting it to the test at the newly merged entity or because directors might choose other multinational firms as peer comparisons for executive pay levels and this may result in an immediate increase in executive pay. Because cross-border takeovers may have a more positive impact on executive compensation than domestic acquisition, we compare U.S. acquisitions not just with domestic acquisitions but with all cross-border non-U.S. acquisitions. Our first Hypothesis is therefore as follows:

Hypothesis 1: Cross-border takeovers of U.S. targets have a more positive impact on compensation than domestic acquisitions or other cross-border acquisitions

Acquisitions of U.S. targets may not only affect the level of compensation of U.K. acquirers but also its structure, and in particular the link between pay and performance. Since the link between total cash compensation and performance is stronger for U.S. firms than for U.K. firms, it is possible that U.K. acquirers will have a stronger pay-performance link following U.S. acquisitions. In particular, if the acquirer achieves post-merger equality in compensation systems through pay rises to the target company level of cash compensation, it is also feasible that they may move to a similar proportion of bonus to base salary. This leads to our second hypothesis:

Hypothesis 2: Cross-border takeovers of U.S. targets result in a stronger post-acquisition pay-performance link than domestic acquisitions or other cross-border acquisitions

3. Sample and variable formation

3.1. Sample

We examine a sample of acquisitions of domestic and cross-border, private and public target companies by U.K. public companies, completed between January 1, 1984 and December 31, 1998. The sample acquisitions are drawn from the Thomson Financial SDC Mergers Database and the Thomson Financial magazine Acquisitions Monthly. Acquisitions are defined as occurring when the bidder owns less than 50% of the target's voting shares before the takeover, and increases its ownership to at least 50% as a result of the takeover. We exclude acquisitions if the U.K. bidder is not a publicly traded firm and included on the Datastream Database, with financial information available for both the accounting years immediately prior to and following the takeover completion date. Many acquisitions involve relatively small targets that may not be expected to have a material effect on the acquirer. We therefore adopt a materiality constraint that limits our sample to acquisitions in which the target's acquisition value is at least 5% of the acquiring firm's market value in the acquisition month. We exclude acquisitions for which the acquisition value was not reported.

The final sample and its annual breakdown are reported in Table 1. Our final sample of 3,603 acquisitions consists of 487 acquisitions of U.S. targets, 2,614 acquisitions of domestic targets and 502 acquisitions of non-U.S. targets. These figures highlight the importance of U.S. targets in the cross-border acquisition activity of U.K. acquirers. Of the other 502 cross-border acquisitions, 79% of the targets are from Europe. Acquisition activity is clustered most heavily in the merger intense years of 1987-1989 and 1994-1997, for both U.S., domestic and other cross-border acquisitions. Many of the sample acquirers engaged in multiple acquisitions during the sample period. The 3,603 acquisitions were carried out by 1,217 acquirers, an average number of three acquisitions per acquirer.

Table 2 reports various firm and transaction characteristics for the sample acquisitions according to whether the acquisition target is a U.S., U.K., or other cross-border acquisition. The total amount spent on U.S. targets is £254 billion, compared to £371 billion on U.K. targets and £114 billion on other cross-border targets. The average U.S. target size is £222 million which is significantly larger than the average for other cross-border acquisitions (£114 million), which is in turn larger than that for domestic U.K. targets (£85 million). U.K. acquirers that acquire U.S. targets are on average significantly larger in market value (£535 million) than acquirers of other cross-border targets (£360 million), which are in turn significantly larger than acquirers of U.K. targets (£173 million). The average relative size of U.S. acquisitions (calculated as the transaction value divided by acquirer market value) is 0.56 and therefore these acquisitions represent major investments for acquirers. The average relative size is similar in other cross-border acquisitions at 0.52. It is much higher in U.K. acquisitions (0.86) but this is distorted somewhat by some very large values since the median relative size is 0.38 and very similar to the U.S. acquisition median of 0.36. The average announcement abnormal return for U.S. acquisitions is 0.26%, compared to 0.53% in U.K. acquisitions and 0.58% in other cross-border acquisitions. Average long run abnormal returns [8] are -8.09% in U.S. acquisitions, -7.64% in U.K. acquisitions, and -18.84% in other cross-border acquisitions. These results are consistent with the findings of Conn et al., (2005) that over the long run, cross-border acquisitions underperform domestic acquisitions, but that this effect is lessened where the target country is of a similar culture to the U.K., as is the case with U.S. acquisitions. A higher proportion of both U.S. and U.K. acquisitions are for publicly listed targets (14% and 19% respectively) compared to other cross-border targets (7%). Secondly, the proportion of hostile acquisitions is 2% for U.S. acquisitions, 3% for U.K. acquisitions, and 1% for other cross-border acquisitions. Thus,

[8] Long-run returns are buy-and-hold abnormal returns, beginning the month following completion through the end of the 36-month period following the completion month, or until the sample firm is delisted. The counterfactual is the same measure for non-acquiring control firms matched on size and market-to-book ratio. The control firms are selected by first dividing all UK stocks listed on Datastream into ten equal sized portfolios based on their market values at the beginning of each calendar year. Those control firms that carried out a sample acquisition within the preceding or subsequent five years are then excluded. Each sample firm is then matched with the non-merging firm from its size portfolio that has the closest market-to-book ratio at the beginning of the calendar year. This procedure is repeated for each post-takeover calendar year using a fresh grouping by size decile for the year in question.

friendly acquisitions dominate our samples. Third, roughly 30% of target companies are majority owned by another company at the time of acquisition. Fourth, a very small proportion of acquisitions involve competing bids, 2% for U.S. and U.K. acquisitions, and 1% for other cross-border acquisitions. Fifth, acquisitions between firms in related industries (defined as the same 2-digit SIC code) occur in 39% of U.S. acquisitions, 36% of U.K. acquisitions, and 47% of other cross-border acquisitions. Finally, cash is the primary medium of payment in acquisitions of all target types, but is much more prevalent in cross-border acquisitions, both of U.S. and other countries. The most prevalent use of stock is found in domestic acquisitions.

3.2. Variable formation

3.2.1. Executive pay

U.K. reporting requirements in the area of top executive pay over most of the sample period were extremely modest in comparison with the USA. Until 1997 in the UK, the principal disclosure requirement originated in the 1967 U.K. Companies Act. This demanded that the company annual report disclose the emoluments (pay plus bonus plus the cash equivalents of any perquisites but excluding pension contributions) of the Chairman, the highest paid director (if a different person), and the total emoluments of the entire board which included the total of directors fees, emoluments for management services, pension fund contributions and following the introduction of FRS3 (June 1993), compensation for loss of office and ex gratia payments. Prior to 1997, wider measures of compensation such as stock options or long-term incentive plans were not typically available because of insufficient information being released regarding exercise price or vesting periods of options.[9, 10]

[9] The disclosure of executive pay in the U.K. changed following the publication in July 1995 of the Greenbury Report on directors' remuneration. This Report recommended that the annual report should disclose pay details for all executive directors, including pension provisions, incentive pay, option plans, performance measurements, severance agreements and comparisons with similar companies. Companies should annually outline their compliance with the Greenbury Code, including explanations if they do not comply. This recommendation on the disclosure of individual directors' remuneration was implemented as a formal requirement in the U.K. Stock Exchange's Listing Rules. However, disclosure was often less than transparent, and subsequently in 2002 the Directors' Remuneration Report Regulations (published by the Department of Trade and Industry) were made a statutory requirement.

[10] It is worth noting that other major acquiring countries of U.S. targets, such as Canada, and France also had similar low requirements prior to the mid 1990s which then increased substantially following regulation (Cheffins and Thomas, 2004).

Given the above data availability, we follow other U.K. executive pay work (see, e.g., Girma et al., 2005a) by employing the total cash compensation of the highest paid director (*Highest paid director*) as our primary measure of executive compensation. Since the identity of the highest paid director is unknown, we are unable with any certainty to examine the impact of acquisition on any one individual's executive pay. However, we are still able to test several important predictions of the convergence literature.

Firstly, the key prediction of the convergence literature is that the change in the pay of the highest paid director following U.S. acquisitions is greater than for other types of acquisition, irrespective of whether the post-takeover highest paid director is that from the pre-takeover period or an imported director from the target board. We are able to test this. A second prediction is that the pay-performance link for the highest paid director is stronger post-takeover compared to pre-takeover, again irrespective of the identity of the highest paid director. Again, we are able to test this. If we find no evidence for these predictions, then this is clearly inconsistent with convergence. However, positive evidence is consistent with different explanations that we can attempt to differentiate between. The first explanation is that the higher pay occurs because a highly paid U.S. target company director is imported onto the acquirer's board following acquisition. The post-acquisition increase in pay of the highest paid director occurs either because the new imported U.S. director is the new highest paid director, or because the pay of the pre-takeover highest paid director is increased in line with the new U.S. director.[11] The alternative explanation is that pay increases are higher following U.S. acquisitions because of other reasons such as the inclusion of U.S. companies in peer group comparisons. If the latter explanation is to hold, then any increase in pay should occur regardless of whether target directors are promoted to the acquirer board or not.[12] *Highest directors pay* is provided by Datastream.

[11] We are unable to differentiate between these two explanations because we do not know the identity of the highest paid director.

[12] The latter test essentially answers the question of whether pre-acquisition directors benefit from the takeover, the question with which previous studies in this area have focused on.

The lack of available data on long term incentives means that we do not examine every aspect of executive compensation. However, the effect of U.S. acquisitions on the granting of long term incentives is considered to be of much less importance than the effect on salary and bonus. As described above in Section 2, long term incentives in the U.K. form a much smaller part of compensation than in the U.S. and this grew much less than for U.S. firms over the period. Therefore a given percentage increase in salary and bonus is likely to dwarf the same percentage increase in the value of long term incentives. As a result, the effect of U.S. acquisitions on compensation is expected to be much more important for cash compensation than for long term incentives. Furthermore, there appears to be no a priori reason why exclusion of long term incentives will create a bias in our results, since one might expect both cash compensation and long term incentives to be closely correlated with one another. Lastly, anecdotal evidence has certainly suggested that the compensation effects following U.S. acquisitions have tended to be in the form of higher pay rather than increases in long term compensation.

3.2.2. Control variables

In order to examine the impact of acquisitions on director compensation, we regress our measures of directors pay on acquisition indicator variables and a number of firm characteristics that have been shown in the compensation literature to have an important impact on compensation.

Most compensation studies have found a positive relation between compensation and firm size. We proxy for firm size with sales.[13] Agency theories predict that firm performance will be positively correlated with compensation. We employ two measures for firm performance: the accounting return on assets (*ROA*, computed as the ratio of earnings before interest and taxes to total assets); and the annual stock market return, *Return*, (computed as the 12-month raw return of the firm's stock in the fiscal year).

[13] All accounting data has been adjusted for changes in accounting year ends. If an accounting year is shorter or longer than 12 months, then for flow variables (i.e. sales), the figure is divided by the number of months in the accounting year and then multiplied by 12 to get an annualized flow. Stock variables (i.e. assets) are not adjusted.

To examine whether changes in compensation are related to takeover performance, we calculate short run announcement returns (*Announcement return*) to the acquiring firm. We employ) standard event study methodology to calculate returns for the 3-day period (-1, 1) around the announcement date. The abnormal returns are estimated using the market-adjusted model, where the benchmark return is the contemporaneous return on the Datastream equal weighted market index.

4. Results

4.1. Univariate analysis

In this section we examine the changes in compensation and their link with performance, in a simple univariate framework, in the period surrounding the completion of the acquisition.

Panel A of Table 3 shows compensation levels for the highest paid director in the year prior to and after acquisition. Before merger average (median) cash compensation for the highest paid director is £260,000 (£223,000) for acquirers of U.S. targets, £174,000 (£138,000) for acquirers of U.K. targets, and £241,000 (£200,000) for acquirers of other non-U.S. cross-border acquisitions. Therefore, acquirers of U.S. targets have the highest paid directors, followed by acquirers of cross-border non-U.S. targets, and then acquirers of U.K. targets. In terms of changes in compensation following acquisition, we find important differences across the different acquisition types. Compensation increases by a mean (median) of £33,000 (£23,000) after US acquisitions, compared to £24,000 (£15,000) in U.K. acquisitions, and £25,000 (£19,000) in other cross-border non-U.S. acquisitions. The differences U.S. deals and the other two types of deal are statistically significant (using t-tests and Wilcoxon rank sum test) at the 5% level.

Panel B of Table 3 reports the cross-sectional correlation between the change in compensation and the change in profitability, in the year prior to acquisition and the year following acquisition. We report this for the three different types of acquisition. The correlation between pay change and profitability change prior to acquisition is 0.099 for acquirers of U.S. targets. This declines to 0.088 following acquisition. In acquisitions of U.K. targets, the

corresponding figures are 0.102 and 0.127, whilst for other cross-border targets the corresponding figures are 0.074 and 0.064. There is therefore some evidence that the pay-performance link increases in U.K. and other cross-border acquisitions but no evidence that acquisitions of U.S. targets result in a higher pay-performance link than other types of acquisition.

Our conclusion is that U.S. deals result in higher absolute compensation increases than U.K. deals and other cross-border non-U.S. acquisitions. However, U.S. deals do not result in a higher pay-performance link than other acquisitions. The analysis thus far is limited in that it does not control for other important determinants of pay, such as initial pay levels and changes in size through acquisition which as we have seen differ significantly amongst the different merger types. In the next section we incorporate these factors within a multivariate framework.

4.2. Multivariate analysis

We next conduct multivariate regression analysis that relates changes in compensation to acquisition characteristics and control variables. We employ a pooled cross-section (panel data) approach where our panel data consists of all U.K. public companies with financial information available on the Datastream database for at least two successive accounting years during 1985-98. Our data includes 1,217 acquirers for which we have 11,048 firm year observations,[14] and 1,204 non-acquirers for which we have 5,793 firm year observations. In total we have 16,841 firm year observations. For this panel data, we estimate the following regression

$$\Delta \, Log\ pay_{it} = \alpha_0 + f_{ind} + f_t + \beta_1 \, Log\ pay\text{-}1_{it} + \beta_2 \Delta \, Log\ sales_{it} + \beta_3 \Delta \, ROA_{it} + \beta_4 \, Return + \beta_5 \, Announcement\ return_{it} + \beta_6 \, U.S.\ target + \beta_7 \, U.K.\ target + \beta_8 \, Other\ cross\text{-}border\ target + e_{it} \quad \textbf{(1)}$$

[14] Of the 11,048 firm year observations for the 1,217 acquirers, there are 2,838 years in which an acquisition is completed. This is lower than the total number of 3,603 acquisitions reported in Tables 1 and 2 because of multiple acquisitions in particular years.

where the operator Δ on any variable X is simply current value X minus last period value (that is, $\Delta X = X_t, - X_{t-1}$) and e is an error term.

The dependent variable is the annual change in the natural log of compensation. This specification is very similar to that used by a number of the previous studies discussed in Section 2.3, such as Conyon and Gregg (1994), Avery et al., (1998), Anderson et al., (2002), and Girma et al., (2005a). The coefficient on lagged log pay, $\beta_{1,}$ controls for prior pay levels and provides an estimate of the speed with which pay adjusts over time. Values of β_1 in the range $-2 < \beta_1 < -1$ are consistent with a cyclical convergence in pay towards equilibrium. If $-1 < \beta_1 < 0$ the convergence is monotonic, with a value of β_1 closer to -1 implying faster convergence (Girma et al., 2005b). Prior levels of pay appear particularly important to control for, given the large differences that exist between the different acquirer types.

U.S. target is a dummy variable that is given the value one in the fiscal year immediately following the completion of a U.S. acquisition, zero otherwise. *U.K. target* is a dummy variable that is given the value one in the fiscal year immediately following the completion of a U.K. acquisition, zero otherwise. *Other cross-border target* is a dummy variable that is given the value one in the fiscal year immediately following the completion of a cross-border acquisition outside the U.S., zero otherwise.

We include 38 industry dummies to control for industry differences in the demand for managerial talent. These industry dummies are based on Datastream Level 4 industry groupings, which are equivalent to two-digit standard industrial classification codes in terms of detail. Year dummies are employed to account for economy-wide shocks. The other variables are described in Section 3.2.2. above.

In order to measure the impact of the different types of acquisition on the pay-performance link, we interact each of the acquisition dummy variables with the change in profitability variable. Specifically, we estimate the following regression

$$\Delta \text{ Log pay}_{it} = \alpha_0 + f_{ind} + f_t + \beta_1 \text{ Log pay-1}_{it} + \beta_2 \Delta \text{ Log sales}_{it} + \beta_3 \Delta \text{ ROA}_{it} + \beta_4 \text{ Return} + \beta_5 \text{ Announcement return}_{it} + \beta_6 \text{ U.S. target} + \beta_7 \text{ U.K. target} + \beta_8 \text{ Other cross-border target} + \beta_9 \text{ U.S. target} * \Delta \text{ ROA}_{it} + \beta_{10} \text{ U.K. target} * \Delta \text{ ROA}_{it} + \beta_{11} \text{ Other cross-border target} * \Delta \text{ ROA}_{it} + e_{it} \quad \textbf{(2)}$$

The coefficients, β_9, β_{10}, and β_{11} measure whether the pay-performance sensitivity is greater following U.S., U.K. and other cross-border acquisitions respectively, in the year following acquisition compared to other years. This is very similar to the approach employed by Harford and Li (2005).

Table 4 presents the summary statistics for the variables used in our regressions. The estimation procedure for all regressions uses Huber-White standard errors that are robust to clustering at the firm level.

Column (1) of Table 5 reports the results of estimating Eq. (1). The *Log pay -1* coefficient is significantly negative, indicating that changes in pay are negatively related to prior compensation levels. The coefficients for the Δ *Log sales,* Δ *ROA*, and *Return* variables are all positive and statistically significant at high levels consistent with expectations. The coefficient for the *Announcement return* variable is positive but not statistically significant. These results are very robust and hold throughout the rest of the analysis. The coefficients for the three dummy variables *U.S. target, U.K. target,* and *Other cross-border target* are all significantly positive. However, the coefficient for *U.S. target* (0.054) is significantly larger (at the five % level) than that for *U.K. target* (0.018), and *Other cross-border target* (0.018), both of which are not significantly different from one another. This evidence is consistent with Hypothesis 1, that U.S. acquisitions result in significantly higher pay changes than either domestic or other cross-border acquisitions.

Column (2) of Table 5 reports the results of estimating Eq. (2). The coefficient for each of the interaction terms is statistically insignificant, and does not differ significantly amongst the

different types of acquisition. Our conclusion is that U.S. acquisitions do not result in greater pay-performance sensitivity than either domestic or other cross-border acquisitions.

4.3. Robustness tests

We subject these key conclusions to several robustness tests:

We have focused the analysis on the year immediately following acquisition. However, changes to the levels and structure of pay may take place over time and not be immediately apparent in the year following acquisition. We repeat the regression analysis in Table 5 but instead use acquisition dummy variables which are lagged by one year so that they measure the impact of merger on pay in the year following the year of completion of the acquisition. Our results are unchanged by this alternative method. The coefficients for the acquisition dummy variables are very similar to those in column (1) of Table 5 and the significant differences remain between the different types of acquisition. Similarly, we find no evidence of increased pay-performance sensitivity for U.S. acquirers (or other acquirers) in this year either. We also do the same thing using a lag of two years. None of the coefficients are significantly different from one another and the pay-performance sensitivity coefficients are not different from zero nor from one another. We are confident therefore that our results are not affected by this factor.

In the above analysis we controlled for changes in firm size by including in the regression the change in sales of the acquirer. We did not however allow for any differential pay impacts between external (merger) growth and internal (organic non-merger) growth. However, if there is a differential impact between the two forms of growth it could bias our results. For example, if external growth is rewarded more highly than internal growth, then since U.S. acquisitions are larger than other acquisitions, this could explain the larger pay increase in U.S. acquisitions. In order to address this issue we decompose the change in sales of the acquiring company in the acquisition year into those sales associated with the sales of the acquired company (external growth) and those associated with the internal sales of the acquirer (internal growth). To do so we use the same method as Avery et al (1998). Specifically, we define r as the ratio of the

acquiring firm's sales to the sum of the acquiring and target firm [15] sales in the year before the acquisition. We define internal growth as *r* multiplied by acquirer sales in the acquisition year minus acquirer sales in the year prior to acquisition. Alternatively, external growth is the difference between internal growth and the change in sales. The regression results using internal growth and external growth show that the coefficients for the two measures are close to one another and not significantly different. Furthermore, the U.S. acquisition dummy coefficient remains significantly positive and significantly larger than the acquisition dummy coefficients for U.K. and other cross-border acquisitions. We are therefore confident that are results are not driven by the larger size of U.S. acquisitions.

There are other potential determinants of executive compensation which we have not controlled for in the above model and which may affect our results. Firstly, we have not included firm risk in the analysis, which captures both the firm's information environment and operating environment and has been shown to be an important determinant of executive pay (see, e.g., Core et al., 1999). We measure firm risk as the standard deviation of share returns measured over the fiscal year. Secondly, we have not controlled for growth opportunities which we incorporate by using the firms market-to-book value. Inclusion of these two variables in Table 5 regressions, results in an insignificant coefficient for the change in market-to-book value and a significantly negative coefficient for the change in the standard deviation of firm stock returns. The magnitude and statistical significance of our acquisition dummy variables and change in profit interaction variables are unchanged.

4.4. What factors drive the large increases in pay after U.S. acquisitions?

The key conclusion so far is that pay levels are on average significantly increased following U.S. acquisitions. In this section we seek to explore whether this higher pay can be explained by

[15] Target company sales data is available from SDC and Acquisitions Monthly for 2,051 of the 3,603 sample acquisitions. For the remaining 1,552 targets for which sales is unavailable, we estimate their sales as follows: Firstly, we estimate the median transaction value to sales multiple for the 2,051 acquisitions, which is equal to 1.65. Secondly, for the 1,552 targets we divide their transaction value by 1.65 for the estimated sales value. As a check on the robustness of our results, recalculated our results only using the 2,051 acquisitions for which actual target sales data was available and we also used the transaction value of the target and the market value of the acquirer to estimate *r*. Our results were unchanged by these alternative methods.

the explanations for convergence in executive pay given in Section 2. In particular we examine the impact of prior pay levels, order or acquisition, target organizational form, and board changes following acquisition.

4.41. Prior acquirer pay levels

If the large pay increase in U.S. acquisitions is the result of convergence in the form of either subsequent U.S. peer group inclusion or pay integration with U.S. subsidiary managers, we may expect both explanations to have less of an impact when acquiring management is already earning relatively high compensation because pay will need to increase relatively less to be comparable to U.S. levels for a given firm size. In order to test this we adopt an approach similar to Cosh and Hughes (1997), and for each year of the analysis we run a regression of compensation on company size for all firms to estimate the size pay relationship for that year. We then compare the predicted pay with the actual pay level for each company in each year, and subsequently split acquirers into two subsamples according to whether their pay is higher or lower than it should be in the year prior to acquisition year. The changes in compensation around acquisition for these two subsamples of acquirers are reported in Panel A of Table 6. The change in pay for acquirers of U.S. targets is £33,000 irrespective of whether the pay level prior to acquisition was above or below the expected value. In contrast, in both domestic acquisitions and acquisitions of other targets, the change in pay is significantly higher for acquirers with initial low pay levels. These results appear contrary to what we would expect and provide no evidence that pay increases in acquisitions of U.S. targets depend on initial pay levels.

4.42. Order of acquisition

One explanation for the increases in pay following U.S. acquisitions is that managers are subsequently able to claim U.S. level pay because they are operating in the U.S. market. If this were indeed the case, we would perhaps expect to observe a much larger impact for acquirers upon their first acquisition in the US, relative to later acquisitions. We therefore compare the pay increase for first U.S. acquisitions with subsequent U.S. acquisitions. The changes in

compensation around acquisition for these two subsamples of acquirers are reported in Panel B of Table 6. There is no difference in the pay impact of first and later deals for either U.S. acquisitions or other cross-border deals. In the case of domestic acquisitions, later deals have a more positive impact.[16]

4.43. Target organizational form

To test the pay integration hypothesis we ideally require target CEO pay. However, CEO pay data is not available for many of our target firms because they are unlisted. We can however, sort the target firms according to factors that may be associated with higher CEO pay. In particular, our sample of U.S. acquisitions can be split according to target organizational form. There are several reasons why we may expect higher pay increases for acquisitions of public targets vis-à-vis private targets, irregardless of geographical location. Principal-agent theory suggests that in public companies, diffuse private owners will find it harder than large private owners to monitor executive effort, and will therefore need to pay more to induce optimal effort levels and link pay to performance more strongly. The higher pay levels may cause acquirer pay to increase following public acquisitions in an attempt to equalise pay structures.[17] There is virtually no evidence on pay levels in U.S. private firms, and we can not therefore make comparisons with U.K. private firms. There are however, various reasons why pay for the former will be higher. Thomas (2005) argues that U.S. CEOs may be paid more because they contribute more to their firms' value (American firms have greater growth opportunities and have greater resources to be deployed), play a much larger role in the decision making process, and face higher opportunity costs because of better access to capital markets for financing their own start-up businesses. These arguments appear to apply in equal measure to CEOs of both private and public targets. However, this international pay difference may be further magnified

[16] We also restricted the analysis to those acquirers who make more than one U.S. acquisition, U.K. acquisition or other acquisition, and we split in each subsample according to whether the acquisition is the first or a later deal. The results were unchanged. As a further test, we combine the previous two measures and compare those acquirers with low pay levels in their first acquisition with other acquisitions. We find no evidence that pay increases in U.S. acquisitions are different between these subgroups.

[17] Alternatively, acquisitions of public targets could result in higher wages because they are harder to transact and more high profile.

in public companies because in addition to the above, CEOs in U.S. public companies have more power than foreign CEOs because of higher dispersed share ownership and greater bargaining power in the face of hostile takeovers (Thomas, 2005). Therefore, if integration of pay systems is an important explanation for the U.S. acquisition pay premium, we expect to observe a larger increase in pay in acquisitions of public compared to private targets, relative to U.K. and other acquisitions.

The changes in compensation around acquisition for the subsamples of private and public acquisitions are reported in Panel C of Table 6. Pay increases are significantly higher in public acquisitions compared to private acquisitions, for both U.S. and U.K. acquisitions, although not for other cross-border acquisitions. Although the difference between U.S. acquisitions and other acquisitions is greater in public acquisitions, the difference is still statistically significant for private acquisitions also, at least in the case of U.K. acquisitions. Given these significant univariate differences, we also carry out multivariate analysis. We rerun regression (1) of Table 5, including dummy variables set equal to one if the acquisition is of a publicly listed target for the particular geographical location. The results, not tabulated,[18] show that the coefficients for U.S. public acquisitions and U.K. public acquisitions are both significantly positive, although the coefficient for other cross-border public acquisitions is not significant. However, these coefficients are not significantly different from one another, suggesting that the higher pay increase difference between U.S. public acquisitions and U.S. private acquisitions is no different than that for U.K. public and private acquisitions. In contrast, even with the inclusion of these additional dummy variables, the coefficient for the U.S. acquisition dummy is significantly more positive than those for both the U.K. and other cross-border acquisition dummy variables. Therefore, the greater impact of U.S. acquisitions is not restricted to acquisitions of public targets, the high pay levels for which have been well documented. It also extends to private targets. The results suggest that the impact of acquisition on compensation differs significantly

[18] The tabulated results are available from the author on request.

according to the targets organizational form, but that U.S. acquisitions result in significantly higher pay regardless of this effect.

4.44. Acquirer board changes following acquisition

According to the pay-integration hypothesis, pay increases will be larger, ceteris paribus, when the CEO of the U.S. acquired unit is employed post-acquisition. Because of data availability, this explanation is very difficult to test precisely. Firstly, data on whether target CEOs are subsequently employed by the acquiring firm at below board level is generally unavailable as is their post-acquisition pay level. A potential proxy for subsequent CEO employment is whether they are promoted to the acquirer board or not. In such cases (because the highest paid director's identity is unknown), the highest paid director could be the pre-acquisition highest paid director or the newly recruited target company CEO. However, one could argue that the highest paid director's identity is not relevant from the perspective of convergence. There is no electronic data source for U.K. public firm board members and their backgrounds over our sample period. Datastream does however, report the number of directors each year for our sample firms and we employ this measure, splitting acquirers into those in which the board size increases in the year of the acquisition, and those for which the board size does not increase.[19] Our reasoning is that acquirers with a board size increase are more likely to have recruited target directors than those acquirers whose board size does not increase.[20]

The changes in compensation around acquisition for these subsamples of acquisitions are reported in Panel D of Table 6. Pay increases are significantly higher for acquirers in which board size increases in the year of acquisition. However, the same pattern exists not just for U.S. acquisitions but also for U.K. and other cross-border acquisitions. The positive difference between U.S. acquisitions and U.K./other cross-border acquisitions are somewhat larger for acquirers with board changes, although the significance levels are similar for both types of

[19] For U.S. acquisitions, there is a board increase in 155 out of 441 deal years. For U.K. acquisitions the number is 732 out of 2,122, and for other cross-border acquisitions the number is 148 out of 467. Alternatively, for all non-deal years (14,007) there are 3,608 years in which there is a board increase.

acquirer. The results suggest that the large pay increases in U.S. acquisitions are not solely associated with changes in board size, but they may be relatively larger as a result. In order to explore this further we again carry out multivariate analysis. Again, we rerun regression (1) in Table 5, including additional dummy variables which are the particular acquisition type dummies set equal to one if there is a board increase in the year of acquisition, and a board increase dummy variable, designed to pick up any general effect for all firms of a board increase. The results, not tabulated,[21] show that the coefficients for the additional U.S. acquisition board increase dummy variable and the U.K. acquisition board increase dummy variables are both significantly positive, although the coefficient for other cross-border board increase acquisitions is not significant. However, these coefficients are not significantly different from one another, suggesting that the higher pay increase difference between U.S. board increase acquisitions and U.S. non-board increase acquisitions is no different than that for U.K. board increase and no board increase acquisitions. In contrast, even with the inclusion of these additional dummy variables, the coefficient for the U.S. acquisition dummy is significantly more positive than those for both the U.K. and other cross-border acquisition dummy variables. Therefore, the greater impact of U.S. acquisitions is not restricted to acquisitions in which the board size increases. It also extends to acquisitions in which board size does not increase. U.S. acquisitions result in significantly higher pay regardless of board size effects. We tentatively interpret this result as suggesting that the U.S. pay increase can not solely be explained by the recruitment and subsequent high pay of target executives. Since the large pay increases in U.S. acquisitions holds for boards which remain unchanged following acquisition, this suggests that the pay increases accrue to the highest paid director that was in place before the acquisition and is therefore important from the perspective of motivations for U.S. acquisitions.[22, 23]

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[20] Of course, this is very much an imperfect measure because it is possible that acquirers with no board increase may have recruited target directors and sacked their previous directors. Although we argue that this is less likely to be the case, the tests should be interpreted in this light.

[21] The tabulated results are available from the author on request.

[22] In the case of public targets, it is much more likely that target CEOs will sit on the acquirer board if they remain with the target firm, and therefore much more likely that an increase in board size reflects a target director coming on board. When we analyse public firms only, we find that there is no difference in the pay increase according to

4.45. Are pay-performance links stronger after U.S. acquisitions when certain conditions hold?

The arguments in Sections 4.42 to 4.44 apply not just to increases in pay levels but equally to expected pay-performance increases in U.S. acquisitions as well. We expect the pay-performance link to be stronger post-U.S. acquisition when the acquisition is the first of a series of U.S. deals, when the target company is public, and when board size increases following acquisition. We therefore carry out further tests to examine whether the pay-performance link is more likely to increase following U.S. acquisitions when these conditions hold. In each case, we rerun regression (2) of Table 5 including additional interactive dummy variables which are equal to the acquisition type multiplied by the change in profitability (as in Table 5) further interacted with dummy variables equal to one if the acquisition type is the first in a merger series, the acquisition target is public, and if board size increases following acquisition. These additional interactive variables will inform on whether the change in pay following acquisition is more closely linked to the change in profitability under these three separate conditions. The results from this analysis, not tabulated,[24] show little evidence that this is the case. For none of these coefficients does the U.S. acquisition category differ significantly from either U.K. or other cross-border acquisitions. Therefore, we conclude that the link between pay and profitability is not significantly stronger following U.S. acquisitions, even under conditions where we would expect convergence effects to be strongest.

4.5. Are the U.S. pay increases following acquisition the result of managerial power?

Either of the two explanations given above for the high increase in pay following U.S. acquisitions could be interpreted as efficient contracting. However, an alternative view, which can be referred to as the managerial power approach, argues that CEOs have the power to

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whether board size increases or not. In both cases there is a significant increase in pay, and no significant difference between the two.

[23] One potential problem here is that with acquisition accounting only the revenues and expenses associated with the fiscal year since acquisition are incorporated, the pay may be lower for target directors than it would be in the second full year following acquisition. Similarly, one potential problem here is that in the year of acquisition, the pay of a target firm director may be linked to target performance but not acquirer performance. We therefore rerun Table 7 using acquisition dummies for 2 years following the acquisition, and also examine the ROA interaction variable in the 2nd year following acquisition. Our results are unchanged for regression (1). For regression (2)

influence board decisions including compensation decisions (see, e.g., Bebchuk and Fried, 2003). The likelihood of adopting a compensation arrangement that is favorable to executives but suboptimal for shareholders will depend not only on the power that the CEO has but also on how the arrangement is perceived by shareholders. If the shareholders perceive the arrangement as a blunt expropriation, they are likely to act against it. This argument implies that CEOs who want to maximize rent extraction might try to find justifiable reasons for their compensation. A U.S. acquisition could provide such a justification, since the CEO could use any of the above hypotheses as a justification for additional compensation. For example, a U.S. acquisition could allow U.K. CEOs to call for pay parity with U.S. directors (whether recruited to the acquirer board or otherwise). Under the managerial power approach, there should be a positive correlation between the change in compensation around U.S. acquisitions and the level of managerial power in the firm.

In order to test this hypothesis we create a managerial power dummy variable for each sample firm year. To measure the impact of managerial power on the U.S. acquisition pay premium, we then interact the managerial power dummy with the three acquisition dummy variables. We experiment with a range of managerial power dummy measures. Firstly, we set it equal to one if the board size is greater than the median board size over the sample period (seven), zero otherwise. The results, not tabulated,[25] show that board size has a significantly positive impact on the change in pay but the interactive dummies are all insignificantly different from zero and each other. Secondly, we set the managerial power measure equal to one if both the median board is less than seven and the proportion of non-executive directors is less than the median (0.40). Again, none of the interactive dummy variables are significantly different from zero or each other. These results suggest that the high increase in pay following U.S. acquisitions is not the result of managerial power.

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neither U.S. ROA interactive coefficients are different from one another or from domestic and other cross-border coefficients.

[24] The tabulated results are available from the author on request.

[25] The tabulated results are available from the author on request.

5. Conclusion

In this study we examined the impact of a large sample of 487 acquisitions of U.S. targets by U.K. public acquirers on executive compensation. We compared this sample with 2,900 domestic acquisitions and 502 acquisitions of other cross-border targets. Our long sample time period from 1984-1998 covers two merger waves which can be differentiated relative to previous waves by the high proportion of cross-border deals. U.K. acquirers played a pivotal role in this emerging international market for corporate control, and were the most active acquirers of U.S. targets. Such cross-border acquisitions have the potential to cause important differences in corporate governance systems. In particular, given the high pay levels and pay-performance links in the US, U.S. acquisitions may cause convergence towards the U.S. paradigm. It is this issue that we directly address.

Relative to the US, disclosure requirements for U.K. public firms over this important period of merger activity was limited, being restricted to the cash compensation of the highest paid director. However, analysis of this variable has, we believe, enabled us to reach some robust and important conclusions. Firstly, acquisitions of U.S. targets result in a large and significant increase in the cash compensation of the highest paid director, compared to both domestic and other cross-border acquisitions. Secondly, the link between cash compensation and firm performance is not increased following acquisitions of U.S. targets.

We examined whether the pay increases in U.S. acquisitions were greater under certain conditions which, a priori, we expect to have a greater impact. We may have expected those acquirers with lower initial pay levels to experience larger increases in pay following U.S. acquisitions. We found no evidence of this. Secondly, we may have expected pay increases to be greater for first acquisitions in the U.S. compared to later acquisitions. We found no evidence of this. Thirdly, we expected the pay increases in U.S. acquisitions to be greater in acquisitions of public targets compared to private targets, relative to other types of acquisition. Although we found that pay increases are significantly higher following public acquisitions, this appears to be a general finding which applies equally to domestic acquisitions. Lastly, we expected the pay

increases in U.S. acquisitions to be greater when board size increases, since this could reflect the recruitment of a higher paid target director. Again, we found no evidence of this. Finally, we examined whether the pay increases in U.S. acquisitions were higher where there was more managerial power in the acquiring firm. We found no evidence to support this. In summary, although we find evidence of higher pay changes following U.S. acquisitions, we find no evidence that the increases are consistent with explanations for higher pay that the convergence literature has put forward.

Finally, since 1997, disclosure requirements for U.K. firms are now comparable to those in the US. More detailed precise questions that were not possible to address for our time period can now be addressed, albeit inevitably with much smaller samples. Firstly, although we uncover a large pay increase following U.S. deals, we do not know the precise form of the increase and whether it is an increase in base salary or bonus. Secondly, since we do not know the identity of the highest paid director, we were unable to ascertain whether the pay increase accrues to the CEO that initiated the U.S. acquisition. Similarly, we were unable to address what happens to the compensation of U.S. target directors that become acquirer directors, and, if higher paid than acquirer CEOs, what happens over time to the pay of the acquirer CEOs. Thirdly, we concluded that the cash pay-performance link was not strengthened following U.S. acquisitions, but lack of data availability meant we were unable to consider long term incentives such as share options. These three issues can now be addressed with post-1997 data. Understanding them is important from the perspective of convergence of international pay levels, the motivations for cross-border acquisitions of U.S. companies, and ultimately the performance effects of such acquisitions.

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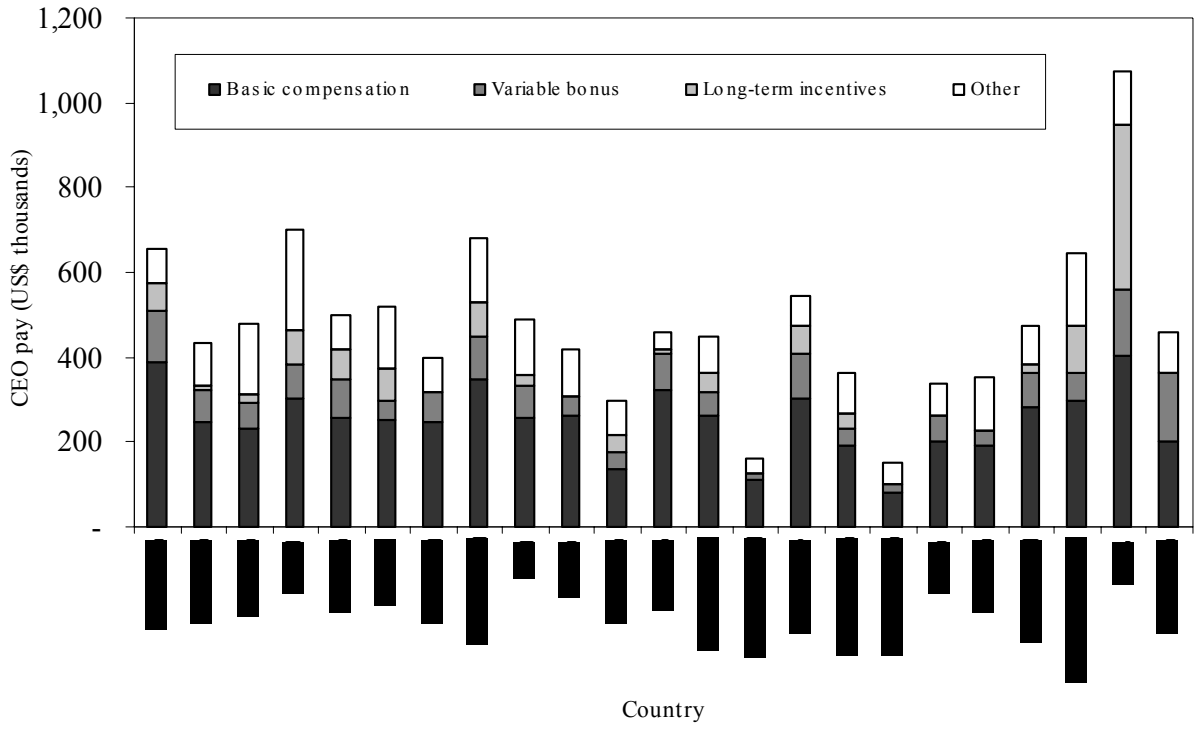

Fig. 1. International comparison of CEO pay levels and structures. Data from Towers Perrin's Worldwide Total Reward report, 1999. Data reflects Towers Perrin's estimate of competitive CEO pay as of April 1999 for industrial companies with approximately U.S. $250 million in annual revenues. Local currency amounts are converted into U.S. dollars using April 1999 exchange rates. *Basic compensation* includes base salary plus other regular payments (such as vacation pay, 13th month pay, and regular bonuses unrelated to performance). *Variable bonus* includes target performance-based cash awards. *Long-term incentives* include the grant-date expected value of option grants and annualized targets from long-term incentive plans. *Other* includes both voluntary and compulsory company contributions and the value of perquisites.

Table 1

Number of sample acquisitions by year

This table gives the breakdown of sample acquisitions by year of completion date. The sample acquisitions are those completed by U.K. public firms between 1st January 1984 and 31st December 1998 identified on either the Thomson Financial SDC merger database or the Thomson Financial publication Acquisitions Monthly. To be included, the acquirer must be included on the Datastream Database, with financial information available for both the fiscal year immediately prior to and following the acquisition completion date. The acquisition value must be at least five % of the acquirer's market value at the start of the announcement month (acquisition values in foreign currencies were converted to sterling using the exchange rate at the end of the announcement month). Columns 2-4 report the year distribution for subsamples, stratified according to the target firm's geographical location (U.S., U.K., or other cross-border). The breakdown of non-U.S. cross-border deals by country is as follows: Australia (38), Austria (2), Belgium (23), Bermuda (2), Burma (1), Canada (33), Cayman Islands (1), Chile (1),China (1), Denmark (14), Eire (11), Finland (3), France (97), Germany (73), Greece (1), Hong Kong (5), India (2), Hungary (1), Iceland (1), Italy (21), Luxembourg (4), Malaysia (3), Mexico (4), Netherlands (74), New Zealand (6), Norway (6), Pakistan (1), Panama (1), Portugal (3), Singapore (2), South Africa (5), Spain (26), Sri Lanka (2), Sweden (23), Switzerland (11).

Year	U.S. targets	U.K. targets	Other cross-border targets
1984	1	5	1
1985	21	77	4
1986	39	142	10
1987	48	206	21
1988	63	306	41
1989	60	255	56
1990	41	192	46
1991	20	141	32
1992	19	140	29
1993	21	157	31
1994	25	216	38
1995	34	185	44
1996	34	213	45
1997	34	218	59
1998	27	161	45
Total	487	2,614	502

Table 2

Descriptive statistics on sample acquisitions

This table reports descriptive statistics for the sample acquisitions. *Total deal value* is the total value of all transactions. *Deal size* is the value of the transaction. *Acquirer size* is the acquirer's market value at the start of the announcement month (acquisition values in foreign currencies were converted to sterling using the exchange rate at the end of the announcement month). These values are expressed in 1998 sterling values deflated using the U.K. Retail Price Index. *Relative size* is *Acquisition size* divided by *Acquirer size*. *Announcement return* is the cumulative abnormal return measured over the three day period surrounding the acquisition announcements (-1 to +1 where day 0 is the announcement date), measured relative to the FT All Share Index. *Long run return* is the buy-and-hold abnormal return for acquirers over the 36 months following the completion month, computed with respect to non-acquiring control firms matched on size and market-to-book ratio. *Days to complete* is the length of the announcement period, from announcement day to completion day. *Hostile* acquisitions are those in which the initial offer is rejected by target management. *Subsidiary* acquisitions are those in which the target is majority owned by another company. *Competed* acquisitions are those in which more than one bid is made for the target company. *Horizontal* acquisitions are those in which the acquirer and target share the same primary two digit SIC code. *Method of payment* is defined according to whether the offer is a pure 100% cash offer (*All cash*), a pure 100% stock offer (*All stock*), some combination of stock and cash (*Stock and cash*) or some alternative payment method (*Other*). There are 83 sample acquisitions for which the method of payment is unknown. All continuous variables except *Total deal value* are winsorized at the five % level to remove influential outliers.

Year	U.S. targets	U.K. targets	Other cross-border targets
Observations	487	2,612	502
Total deal value (£ billion)	254	371	86
Deal size (£ million) mean	222	85	114
Deal size (£ million) median	76	16	29
Acquirer size (£ million) mean	535	173	360
Acquirer size (£ million) median	194	40	107
Relative size mean	0.56	0.85	0.52
Relative size median	0.36	0.38	0.24
Announcement return (%) mean	0.26	0.53	0.58
Announcement return (%) median	0.00	0.00	0.11
Long run return (%) mean	-8.09	-7.64	-18.84
Long run return (%) median	-3.07	-4.45	-8.29
Days to complete mean	35	20	30
		% of acquisitions	
Public	14	19	7
Hostile	2	3	1
Subsidiary	33	30	36
Competed	2	2	1
Horizontal	39	36	47
Method of payment			
All cash	74	45	69
All stock	3	13	7
Stock and cash	10	33	16
Other	8	8	6

Table 3

Changes in pay levels and pay-performance for acquirers around acquisition

This table reports pay levels and pay-performance correlations for acquiring firms in the period surrounding the acquisition. Pre-acquisition is the fiscal year ending prior to the acquisition completion date and post-acquisition is the fiscal year following the acquisition completion date. Panel A reports pay levels pre- and post-acquisition and the difference between the two. Pay level is the cash compensation (salary plus bonus) of the highest paid director. It is expressed in 1998 sterling values (thousands). Panel B reports the cross-sectional correlation coefficient between changes in pay levels and changes in profitability, pre-acquisition and post-acquisition. The change in pay levels is the difference between the cash compensation (salary plus bonus) of the highest paid director in the current fiscal year and the previous fiscal year. The change in profitability is the difference between profit before interest and taxation divided by total assets in the current fiscal year and the previous fiscal year. All variables are winsorized at the five % level to remove influential outliers.

Variable	U.S. targets	U.K. targets	Other cross-border targets	*p*-values for *t*- and Wilcoxon tests		
				U.S. vs. UK	U.S. vs. Other	U.K. vs. Other
Panel A: Pay levels pre- and post-acquisition						
Pre-acquisition mean	260	174	241			
Pre-acquisition median	223	138	200			
Post-acquisition mean	295	199	267			
Post-acquisition median	250	156	216			
Mean difference pre- and post-acquisition	33	24	25	0.00	0.02	0.77
Median difference pre- and post-acquisition	23	15	19	0.00	0.03	0.79
Observations	441	2,122	467			
Panel B: Correlation between pay and profitability pre- and post-acquisition						
Pre-acquisition	0.099	0.102	0.074			
Post-acquisition	0.088	0.127	0.139			
Difference pre- and post-acquisition	-0.011	0.024	0.064			
Observations	424	1,927	440			

Table 4

Summary statistics of regression variables

This table reports summary statistics on the regression variables for the panel data, which consists of all U.K. public companies with financial information available on the Datastream database for at least two successive accounting years during 1984-98. *Pay -1* is the cash compensation (salary plus bonus) of the highest paid director in the previous fiscal year. Δ *Pay* is the difference between the cash compensation (salary plus bonus) of the highest paid director in the current fiscal year and *Pay -1*. Δ *Sales* is the difference between sales in the current fiscal year and the previous fiscal year. Δ *ROA* is the difference between profit before interest and taxation divided by total assets in the current fiscal year and the previous fiscal year. *Return* is the buy-and-hold share return measured over the 12 months of the fiscal year. *Announcement return* is the sum of all event study announcement returns over the current fiscal year. These are calculated as cumulative abnormal returns measured over the three day period surrounding the acquisition announcements (-1 to +1 where day 0 is the announcement date), measured relative to the FT All Share Index. *U.S. target* is a dummy variable set equal to one if an acquisition of a U.S. target has been completed within the last accounting year, zero otherwise. *U.K. target* is a dummy variable set equal to one if an acquisition of a U.K. target has been completed within the last accounting year, zero otherwise. *Other cross-border target* is a dummy variable set equal to one if an acquisition of a cross-border target outside the U.S. has been completed within the last accounting year, zero otherwise. Compensation and sales values are expressed in 1998 sterling values (thousands). All compensation, size, and performance characteristic variables are winsorized at the five % level to remove influential outliers. For the *Announcement return* variable, only those fiscal years which include an acquisition and hence an announcement return, are winsorized at the five % level.

Variable	Observations	Mean	Median	Standard deviation	1st quartile	3rd quartile
Pay -1	16,841	190.92	142.28	138.92	93.00	239.97
Δ Pay	16,841	15.11	6.60	44.72	-4.27	29.43
Δ Sales	16,841	12,485.43	1,915.83	43,879.37	-1,917.98	14,754.60
Δ ROA	16,841	-0.01	0.00	0.06	-0.03	0.02
Return	16,841	0.14	0.09	0.41	-0.15	0.37
Announcement return	16,841	0.00	0.00	0.02	0.00	0.00
U.S. target	16,841	0.03	0.00	0.16	0.00	0.00
U.K. target	16,841	0.13	0.00	0.33	0.00	0.00
Other cross-border target	16,841	0.03	0.00	0.16	0.00	0.00

Table 5

Do acquisitions of U.S. targets result in larger pay increases and stronger pay-performance than other acquisitions?

This table reports regression results examining the changes in cash compensation of the highest paid director in all U.K. public companies with financial information available on the Datastream database between 1985 and 1998. The dependent variable is the change in the log value of cash compensation (salary plus bonus) of the highest paid director, between the current and the previous fiscal year. *Log pay -1* is the log value of cash compensation (salary plus bonus) of the highest paid director in the previous fiscal year. Δ *Log sales* is the difference between the log value of sales in the current fiscal year and the previous fiscal year. Δ *ROA* is the difference between profit before interest and taxation divided by total assets in the current fiscal year and the previous fiscal year. *Return* is the buy-and-hold share return measured over the 12 months of the fiscal year. *Announcement return* is the sum of all event study announcement returns over the current fiscal year. These are calculated as cumulative abnormal returns measured over the three day period surrounding the acquisition announcements (-1 to +1 where day 0 is the announcement date), measured relative to the FT All Share Index. *U.S. target* is a dummy variable set equal to one if an acquisition of a U.S. target has been completed within the last accounting year, zero otherwise. *U.K. target* is a dummy variable set equal to one if an acquisition of a U.K. target has been completed within the last accounting year, zero otherwise. *Other cross-border target* is a dummy variable set equal to one if an acquisition of a cross-border target outside the U.S. has been completed within the last accounting year, zero otherwise. Compensation and sales values are first converted to 1998 sterling values (thousands). All compensation, size, and performance variables are winsorized at the five % level to remove influential outliers. For the *Announcement return* variable, only those fiscal years which include an acquisition and hence an announcement return, are winsorized at the five % level. Corresponding *p*-values from Huber-White robust standard errors are reported in brackets.

	(1)	(2)
Intercept	0.302	0.302
	(11.17)	(11.18)
Log pay -1	-0.062	-0.062
	-(19.69)	-(19.68)
Δ Log sales	0.193	0.193
	(19.92)	(19.97)
Δ ROA	0.301	0.279
	(8.71)	(7.58)
Return	0.055	0.055
	(11.41)	(11.46)
Announcement return	0.043	0.044
	(0.48)	(0.49)
U.S. target	0.059	0.060
	(7.30)	(7.36)
U.K. target	0.026	0.026
	(6.00)	(6.06)
Other cross-border target	0.017	0.019
	(2.03)	(2.23)
U.S. target * Δ ROA		0.116
		(0.53)
U.K. target * Δ ROA		0.124
		(1.15)
Other cross-border target * Δ ROA		0.287
		(1.25)
Year and industry dummies	Yes	Yes
Adjusted R^2	0.1244	0.1247
Observations	16,841	16,841

Table 6
Changes in pay levels for acquirers around U.S. acquisitions conditioned on various factors

This table reports the average change in pay level for acquiring firms between the fiscal year prior to the acquisition completion date and the fiscal year following the acquisition completion date. Pay level is the cash compensation (salary plus bonus) of the highest paid director. It is expressed in 1998 sterling values (thousands) and winsorized at the five % level to remove influential outliers. Panel A reports the change for subsamples of acquirers based on whether pre-acquisition pay levels are lower or higher than expected given the acquirers size. For each year of the sample period we run a regression of compensation on company size for all firms to estimate the size pay relationship for that year. We then compare the predicted pay with the actual pay level for each company in each year, and subsequently split acquirers into two subsamples according to whether their pay is higher or lower than it should be in the year prior to acquisition year. Panel B reports the change for subsamples of acquirers based on whether the particular type of acquisition is the first of a particular type or the 2nd or greater acquisition of a particular type. Panel C reports the change for subsamples of acquirers based on whether the target is a publicly listed company or a private company. Panel D reports the change for subsamples of acquirers based on whether the number of directors on the acquirers board increases in the year of acquisition, and those for which the board size does not increase. The number of observations for each subsample are reported in parentheses.

Variable	U.S. targets	U.K. targets	Other cross-border targets	p-value for t-test		
				U.S. vs. UK	U.S. vs. Other	U.K. vs. Other
Panel A: Pre-acquisition pay level						
Low	33	26	29	0.02	0.41	0.20
	(186)	(1,295)	(236)			
High	33	21	20	0.00	0.02	0.83
	(255)	(827)	(231)			
p-value for t-test	0.93	0.01	0.08			
Panel B: Order of acquisition						
First deal	32	21	24	0.00	0.08	0.28
	(278)	(1,024)	(326)			
Later deals	35	26	25	0.04	0.19	0.84
	(163)	(1,098)	(141)			
p-value for t-test	0.55	0.01	0.83			
Panel C: Target organizational form						
Public	54	33	32	0.00	0.05	0.82
	(83)	(470)	(59)			
Private	30	22	25	0.00	0.26	0.20
	(387)	(1,761)	(439)			
p-value for t-test	0.00	0.00	0.44			
Panel D: Board size increase following acquisition						
Increase	39	28	29	0.01	0.13	0.71
	(155)	(732)	(148)			
No increase	29	22	22	0.01	0.13	0.83
	(285)	(1,387)	(319)			
p-value for t-test	0.07	0.01	0.23			