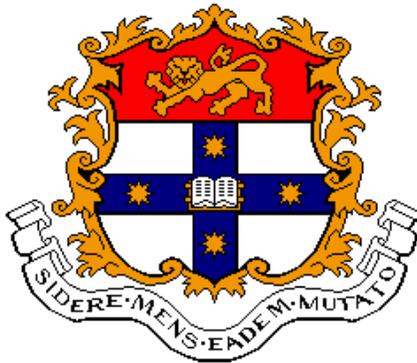


THE POST-MERGER PERFORMANCE OF AUSTRALIAN TAKEOVERS: EVIDENCE AND EFFICIENCIES



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*“The Lord is my strength and song,
And He has become my salvation”*

Psalm 118:14 (New American Standard Bible)

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ABSTRACT

Although there have been many studies into the post-merger performance of takeovers, there remains a fundamental disagreement within the literature surrounding the question of whether performance actually improves. This thesis addresses the issue of whether the performance of merged firms improves following a merger in Australia. The issue is investigated by utilising the methodological innovations of Healy, Palepu and Ruback (1992) and followers, as well as incorporating improvements in research design and additional measures of performance. The study utilises seven different measures of accounting performance, including the first use of a direct operating cash flow measure in a study of this type, analyses seven additional accounting ratios measuring firm structure and efficiency, and includes measures of bid period and long-run sharemarket performance. Using a sample of 81 takeovers on the Australian Stock Exchange from January 1995 to December 1999, matched to 162 control firms, and with a total of 1,785 firm year observations, this thesis finds that accounting performance experiences either no change or slightly negative change following a merger. The thesis also finds that long-run sharemarket performance is not substantially affected by a takeover and there is a strong positive relationship between the choice to offer cash to target firm shareholders and post-merger performance. This thesis finds no evidence to suggest that industry relatedness or the recommendation of target company directors are related to post-merger performance.

KEY WORDS: Takeover, performance, matched firms.

CHAPTER ONE

INTRODUCTION

Despite being described as “one of the most researched areas in finance” (Agrawal, Jaffe and Mandelker, 1992), there are still fundamental questions regarding takeovers which are yet to be unequivocally answered. One of these questions is the effect that a takeover has on the combined long-run performance of the acquiring and target firms. Previous research in this area has produced mixed results, with a number of studies indicating a significant improvement in the post-merger performance of firms¹ and other studies indicating insignificant or negative changes.² A number of different performance measures have been used in researching this question, which can be categorised into sharemarket return measures and accounting performance measures. Within these categories, there are different ways of measuring long-run stock performance³ and accounting performance,⁴ alongside differences in controlling for biases which may influence the results.⁵ As a result, it is unclear whether takeovers, as a whole, make a positive contribution to the performance of firms. This study’s aim is to clarify this stream of research, using Australian data to its greatest advantage.

The volume of literature in this area is indicative of the importance of understanding the effects and desirability of takeovers. There are a number of reasons why evaluating the post-merger performance of Australian takeovers is important. The first of these is that a takeover is a significant economic event. The acquiring firm is investing a significant portion of its resources in taking over the target company. Over and under payments will adversely affect both acquiring and target shareholders respectively. Acquiring firms are

¹ This is evident in studies such as Healy, Palepu and Ruback (1992), Switzer (1996), Manson, Powell, Stark and Thomas (2000) and Powell and Stark (2004).

² Studies which find this type of result include Agrawal et al. (1992), Gregory (1997) and Ghosh (2001)

³ See Brown and da Silva Rosa (1998) and Simmonds (2003) for an investigation of the different methods of measuring long-run sharemarket returns and the differences which may be induced by the choice of measure employed.

⁴ Although the accounting performance measure used has generally been a variation on the operating cash flow measure employed by Healy et al. (1992).

⁵ The two main methods are using a portfolio of firms matched on characteristics which may influence performance (e.g., da Silva Rosa, Izan, Steinbeck and Walter, 2000; Ghosh, 2001; Powell and Stark, 2004), or using median measures of performance by industry, size or other characteristics (e.g., Healy et al., 1992; Switzer, 1996; Agrawal et al., 1992).

generally large (Agrawal et al., 1992), making their performance a matter of greater public concern, as more stakeholders are likely to be affected by performance changes subsequent to a merger.

Properly understanding the post-merger performance of takeovers will also contribute to our understanding of the information efficiency of capital markets. The existence of significant abnormal share returns for target firms around the bid period is well-attested in the takeover literature (e.g., Jarrell, Brickley and Netter, 1988; for Australian evidence see Walter, 1984; Bishop, Dodd and Officer, 1987; Bugeja and Walter, 1995), with insignificant returns usually found for bidder firms (e.g., Jarrell et al., 1988; Bugeja and Walter, 1995). As Healy, Palepu and Ruback (1992, hereafter HPR) note, “from the stock price perspective, the anticipation of real economic gains is observationally equivalent to market mispricing” (p.136). Understanding the long-run effects of a takeover will allow an evaluation of the nature of the returns experienced around the bid period. Whether or not capital markets are able to efficiently incorporate information in the period surrounding a takeover will have important implications on how researchers understand the nature and degree of market efficiency.

The source of gains and the conditions under which gains are more likely to occur, or be more pronounced will also be quite useful for stakeholders. For instance, if the majority of gains are non-operating gains, this may indicate that benefits to the firm are temporary. This information will be useful for target management as they evaluate whether to recommend acceptance of an offer. Similarly, this knowledge will benefit bidder management as they decide which firm to bid for and how to finance that bid. It is also useful for shareholders as they decide whether to accept or reject an offer, or in making decisions about which firms to invest in.

This issue is also significant to government and regulatory bodies in finding out both whether takeovers as a whole create economic value, and the particular circumstances under which the value created by a merger is maximised. This knowledge may be useful in regulating the takeover market, or designing tax regimes to encourage the most

efficient allocation of resources within the takeover market. For instance, information which indicates that cash financed acquisitions are associated with a greater level of post-merger performance than stock financed acquisitions could lead to a taxation system being designed with lower rates of tax for a cash acquisition.

Given the desirability of gaining a clear understanding about the existence or otherwise of gains resulting from the merger of two firms, the current state of the literature in this area provides an important motivation for performing further research in this area. The current research on accounting performance measures is largely derived from HPR, which measured the “industry adjusted operating performance”⁶ of fifty large mergers and found that merged firms experience improvements in post-merger operating performance. Other studies adopted a similar approach (Switzer, 1996; Linn and Switzer, 2001), confirming these findings. Ghosh (2001) identified some weaknesses in the Healy et al. (1992) approach, particularly the failure to control for the unusually large size of firms involved in takeovers and the unusually positive performance experienced by firms in the immediate pre-merger period. In contrast to HPR, Ghosh (2001) did not find evidence of improvements in operating performance post-merger. Powell and Stark (2004) confirm, to an extent, the findings of Ghosh (2001) in a United Kingdom (UK) context. By utilising both the Ghosh (2001) and HPR methodologies, Powell and Stark (2004) find improvements in operating performance using both methods, with HPR’s method producing significantly stronger results than those produced using Ghosh’s.

Similarly, the evidence on long-run stock return performance is mixed, with a considerable body of the literature, typified by Agrawal et al. (1992), finding that long run post-merger performance is generally negative, although other studies identify potential research biases and indicate that the performance of these firms is relatively steady (e.g., Brown and da Silva Rosa, 1998).

⁶ As discussed in section 3, they used a ‘dirty’ cash flow measure, which did not remove changes in working capital.

To this date, there is only a single known Australian study which investigates the accounting performance changes following the merger of two firms (Sharma and Ho, 2002). This provides an important incentive to study this phenomenon in the Australian capital market and regulatory environment, particularly since the takeovers studied in Sharma and Ho (2002) occurred over 13 years ago. The Australian environment has a number of advantages, which make it a favourable environment in which to study the post-merger performance of takeovers. In the period that the sample of takeovers in this study occurred, the United States of America (US) permitted a choice between purchase and pooling of interest accounting for a merger.⁷ In contrast, our accounting standards only allow purchase accounting for a takeover. This will assist in the comparison of results from different firms, as changes over the merger period are all accounted for in the same manner. Additionally, the Australian capital gains tax regime in place over the sample period means that there is no tax advantage to be gained from the choice of financing by means of stock or cash,⁸ making differences in performance between acquisitions funded by those two means easier to interpret. A third major advantage of the Australian environment is that it enables this study to be the first study to use a direct measure of operating cash flows, which is taken from the statement of cash flows.⁹ Prior research performed in the US and the United Kingdom of Great Britain and Northern Ireland (UK) has generally used an indirect measure of cash flows¹⁰, since at the time of these studies there was no direct cash flow measure available. This study can make a considerable contribution to the literature by showing the effect a merger has on actual operating cash flows, rather than an approximation.

⁷ This situation has since changed, with the introduction of a new goodwill standard in the United States.

⁸ The sample period includes takeovers from 1995 until 1999 and hence precedes the changes to the capital gains tax regime in September 1999 which allowed the roll-over of gains from share payments until the disposal of those shares.

⁹ As will be discussed in Chapter 5, the choice of sample period (1995 to 1999) ensures that cash flow data is available for every year of interest, given the introduction of the Statement of Cash Flows in Australia in 1992. Since Sharma and Ho (2002) study takeovers which occur before this date, their study was not able to use direct cash flow information.

¹⁰ Although, as will be discussed in Chapter 4, the measure used by most studies following HPR is not even the best approximation of operating cash flows available, as no adjustment is made for changes in working capital.

The rest of the thesis is organised as follows. Chapter two is a review of extant literature in this area, considering research into accounting performance, sharemarket performance and the determinants of changes in post-merger performance. Chapter three develops the hypotheses which are tested in this study. Chapter four outlines the methodology employed in testing these hypotheses, and chapter five describes the sample and sources of data. Chapter six presents results of analysis based on the methodology outlined in chapter three, and chapter seven offers conclusions based on these results, as well as suggestions for future research in this area.

CHAPTER TWO

REVIEW OF PREVIOUS LITERATURE

There are two main approaches to assessing the long term economic impact of takeovers. One stream of the literature studies the long-run share performance of the merged firms, and relates these results to the returns accrued over the bid announcement period. Another stream investigates the operating performance of merged firms over a 3-5 year period post-merger. Other studies have investigated the determinants of post-merger performance, analysing how different takeover characteristics impact upon performance subsequent to a takeover. This chapter reviews previous research on accounting and sharemarket performance respectively, concluding with a section on studies which have examined the determinants of the post-merger performance of takeovers.

2.1 Accounting Performance Studies

The studies outlined in this section examine the accounting performance of merged firms in the years before and after a merger. Beginning with Healy, Palepu and Ruback (1992), there is a significant body of literature that supports the presence of informationally efficient capital markets, demonstrating significant improvements in post-merger accounting returns consistent with positive bid period sharemarket returns. However, using a different methodology, a number of studies in recent years have found evidence which conflicts with these findings. These two streams are outlined below.

Healy, Palepu and Ruback (1992) examine the cash flow performance of merged firms subsequent to a takeover, using a sample of the 50 largest mergers in the United States (US) between 1979 and mid-1984. The authors posit that sharemarket studies are of limited value, as short term stock return gains may represent an efficient market anticipating actual economic gains resulting from the merger, or capital market inefficiencies. Additionally, an accounting performance measure is said to be better suited to the purpose of identifying the sources of potential gains, and therefore the social desirability of such a gain. HPR take a sample of the 50 largest US mergers between

1979 and mid-1984 and study changes in operating cash flows from the five years leading up to a merger to the five years following a merger. Their cash flow measure is indirect, and is calculated as sales, less cost of goods sold and selling and administration expenses, plus depreciation and goodwill expenses. A cash flow measure is used as it represents the actual economic benefits generated by a firm's assets, as well as being less affected by accounting changes in the year of the takeover. The measure is scaled by the market value of assets for a firm, calculated as the market value of equity adding back the book value of debt. This measure of assets is employed to "simplify intertemporal and cross-sectional comparisons" (HPR, p.139).

HPR find significant operating cash flow improvements for the combined firms post-merger after controlling for industry and prior performance. Industry-wide factors are controlled for by subtracting the industry median cash flow return from the sample firm return. Prior performance is adjusted for by use of a regression, $IAOP_{post} = \alpha + \beta IAOP_{pre} + \epsilon$, where $IAOP_{post}$ is the industry adjusted cash flow measure, post-merger and $IAOP_{pre}$ is the same measure prior to the merger. Since the coefficient of $IAOP_{pre}$ captures the correlation between pre- and post-merger operating cash flows, the intercept captures any other changes in post-merger performance. HPR find that the source of these gains seems to be the more efficient use of assets and a decline in long term research and development spending. By estimating a regression equation to measure the pretax capitalisation rate of postmerger cash flow improvements, HPR estimate between 24% and 100% of improvements are capitalised in the merger period. This study is important for the methodological innovations introduced to the literature, however subsequent studies have identified potential improvements to their design.

The importance of the methodological improvements of HPR is illustrated by a paper by Chatterjee and Meeks (1996). Chatterjee and Meeks review the literature relating to both the long-run accounting and short-run share market performance of takeovers, assessing the apparent inconsistencies between the two types of studies. The authors suggest that these inconsistencies may arise due to the effects of different accounting treatments regarding the takeover transaction, demonstrating this effect by reporting profit changes

in UK mergers from 1977-1990. The study compared post-merger profitability both before and after a change in the accounting standards in 1985 which permitted the immediate write-off of goodwill. Prior to this change, no significant changes in profitability resulted from takeovers, in contrast to significant improvements in post-merger profitability after 1985. By using a measure which excludes the accounting effect of the takeover transaction itself, HPR contribute a research design which avoids the problems identified in Chatterjee and Meeks.

Improvements to the Healy et al. (1992) approach are suggested by Ghosh (2001), who questions the methodology employed by Healy et al. (1992), showing the influence of biases resulting from superior pre-merger performance and size. Ghosh uses the research design advocated by Barber and Lyon (1996)¹¹ to create an abnormal operating performance measure by means of matching control firms to sample firms based on size and pre-performance. Ghosh also theoretically demonstrates the manner in which pre-performance, if different to the industry benchmark against which performance is being adjusted, will bias both the intercept model (HPR) and the change model, however the use of matched firms can mitigate this problem. Ghosh advocates the use of the change model, which is a simple comparison between the pre- and post-merger adjusted performance of firms. The study finds no evidence that operating performance improves following a takeover, although there is evidence that cash financed mergers perform better than share financed mergers in the long run.

Manson, Powell, Stark and Thomas (2000) adopt a similar approach to HPR in a UK context, although they measure cash flows using both the measure adopted in HPR and a measure which adjusts for changes in working capital. Manson et al. (2000) find improvements in operating and non-operating cash flow performance when using industry-adjusted measures and either a regression methodology or post-merger operating performance evaluation. Manson et al. also found that a change in research design

¹¹ This paper investigates the research method employed in event studies which use accounting measures, investigating choice of performance measure, statistical test and adjustment for abnormal performance. The paper investigates industry, industry and size and industry and pre-performance as criteria for selection of a control group, concluding that industry and pre-performance is the preferred criteria, particularly in cases of unusually strong or weak pre-performance.

presented different permutations of the presence or absence of operating or non-operating performance improvements. These differences arose when measuring on the basis of differences in post- and pre-merger operating performance rather than using a regression, or when using non-industry adjusted performance measures. These results again indicate the significant sensitivity which results from the choice of research design in this area.

Similarly, Powell and Stark (2004) also find evidence of operating performance improvements subsequent to a takeover. This study compares results under both HPR and Ghosh (2001) methodologies. Like Ghosh, Powell and Stark (2004) adopt the matched pairs control design advocated by Barber and Lyon (1996). They also use a variety of deflators, consisting of the market value of assets measure used in HPR, the same measure adjusted for changes occurring in the takeover period, the book value of assets and total sales. Powell and Stark (2004) show differences introduced by the choice of using a regression-based methodology (as in HPR) or a change model (see Ghosh, 2001), as well the choice of an accrual as opposed to a 'pure' cash flow performance measure, and the deflator used. Once more, this study shows the sensitivity of results to research design. The results obtained by Powell and Stark (2004) in utilising the Ghosh (2001) and HPR methodologies indicate that there are real differences and biases which can enter a study of this type depending on research design. However, it would appear from the contrasting results found by Powell and Stark (2004) and Ghosh (2001) that there are also potentially differences between capital markets in different countries.

Switzer (1996) confirms the findings of HPR, selecting a broader sample of 413 takeovers over a period of 20 years to confirm whether or not the HPR results were sample specific. Switzer uses a very similar method to HPR, using the same measure of operating cash flows and adjusting performance on an industry median basis. Like HPR Switzer finds that there is a positive association between share market returns around the merger and post-merger performance. The author also finds that results are sensitive to other factors such as the size of the bid, industry relatedness or bidder leverage. Linn and Switzer (2001) utilise the same methodology when examining the effect that method of payment has on the long-run post-merger operating performance of merged firms. This

study uses the same sample of takeovers as Switzer (1996). Linn and Switzer is largely consistent with the findings of HPR and also finds that cash offers tend to be associated with stronger postmerger performance than share offers, consistent with results reported by Ghosh (2001).

Using the HPR performance measure and an industry median control, Ramaswamy and Waegelien (2003) decompose the factors contributing to improvements in operating performance in firms in order to explain why operating performance is improving. Results are consistent with the efficient market explanation and the results of HPR. Whilst performance improvements are significant prior to 1982, they are insignificant from 1983 until 1990. In addition the constitution of performance gains changes somewhat between the two periods, indicating the need for caution when analysing data representing a long time period.

Fee and Thomas (2004) analyse the performance of companies following a merger from a somewhat different angle, examining the effect of takeovers on suppliers and customers of the merged firms. This study uses a matched firms control design, and measures post-merger performance using operating cash flow to sales, also examining sharemarket performance during the bid period. The study finds that firms which are customers of merging firms experience negligible change in performance, rival firms experience positive market reaction and supplying firms experience some negative post-merger performance changes. With regards to the performance of the merged firm itself, Fee and Thomas find evidence of post-merger improvements, noting that these appear to be somewhat temporary. This is suggested because the authors find that improvements in operating performance are strongest in the first year after a merger, which may also indicate that any operating improvements are immediately incorporated in merged firms' operations.

Sharma and Ho (2002) provide the only published Australian study on post-merger accounting performance. Using a sample of 36 takeovers between 1986 and 1991, the study compares a number of accounting measures of performance. Sharma and Ho use

return on assets (ROA), return on equity (ROE), profit margin (PM) and earnings per share (EPS) as accrual measures of operating performance and an indirect measure of operating cash flows (CFFO), scaled by total assets, sales, shareholder's equity and number of shares to measure the cash operating performance of merged firms. Because the takeovers used in the study occur prior to 1992, the authors are unable to utilise the direct measure of operating cash flows now reported in Australia. However, Sharma and Ho do use a more accurate indirect measure than the majority of studies which adopt HPR's cash flow measure, as they make adjustments for changes in working capital in their estimation of cash flows. The study adopts a matched firms control design to derive abnormal performance. Sharma and Ho find no evidence of significant improvements in post-merger operating performance. The authors suggest, however, that different results for the different measures employed in the study may explain inconsistencies within the literature as being the result of using of different measures of performance. Other factors investigated in this study were whether the method of payment, a takeover being conglomerate or non-conglomerate in nature, the size of the acquisition or the level of goodwill were related to post-merger operating performance. No significant relationship was detected in any of these factors.

2.2 Sharemarket Studies

The studies in this section examine the long run post-merger sharemarket returns of merged firms. A majority of studies find that there are negative post-merger stock returns for merged firms over the years subsequent to a takeover, evidence inconsistent with efficient capital markets. Some studies find, in contrast, that long run returns are insignificant after a number of potential biasing factors are controlled for, evidence which is consistent with an efficient capital market. These two streams are outlined in the following subsections.

2.2.1 Efficient Market Advocates

The common thread permeating the studies within this subsection is the presentation of results consistent with a theory of the reasonably efficient operation of capital markets, at least in the United States and the United Kingdom. Reported short run share market gains around the bid period are relatively consistent when compared with post-merger share and accounting performance studies conducted over the long run. As Jarrell, Brickley and Netter (1988) note in their review of empirical evidence surrounding the gains to target and bidder shareholders over the bid period, “shareholders of target companies clearly benefit from takeovers” (p. 51). This is consistent with the findings of Jensen and Ruback (1983), who find a slight but significant gain to bidder shareholders and large positive gains to target shareholders in their review of studies on this issue. Jarrell et al. (1988) also cite an earlier working paper, Jarrell and Poulsen (1987) which finds consistent evidence of target shareholder gains across a period from 1962 to 1985, and although this study indicates that the extent of target shareholder gains varies between decades, reported results are still significantly positive across the whole sample (between 19% and 35%). In contrast, Jarrell and Poulsen (1987) found that bidder share returns were insignificant and negative during the 1980s, having been positive during the 1960s and 1970s. If the efficiency of capital markets is assumed, then long run stock returns ought to retain the returns gained over the bid period to a greater degree, *ceteris paribus*. Hence, a finding of significant negative abnormal stock returns in the years following a takeover would be in conflict with a presumption of market efficiency.

Findings relating to short-term bid period returns in an Australian context are consistent with these results. Bishop, Dodd and Officer (1987) find large increases in target shareholder returns during the bid period and smaller, but still significantly positive returns to shareholders in acquiring firms. The study finds that bidding firms all seem to have consistent positive returns leading into a bid, regardless of the success of a bid, and that similarly target firms all experience sharp positive returns immediately prior to a bid, whether or not these firms are eventually taken over. Interestingly, they also find that

partial takeovers¹² are less successful than full takeovers over the short run period. These findings confirm the results found by earlier studies in Australia, such as Walter (1984), who finds positive returns for an acquiring firm leading into a bid and little change in returns at the point of the bid itself and normal or slightly negative abnormal returns for target firms prior to a bid with significantly positive returns when the bid occurs.

There are many studies which investigate the long run stock returns of newly merged firms following a takeover. As noted in Agrawal, Jaffe and Mandelker (1992), it has been difficult to explain the results of some of these studies given the presumption of informationally efficient markets. In answer to this problem Brown and da Silva Rosa (1998) study takeovers in Australia with a focus on the potential research biases which may effect the results of a long run share performance study. These biases are said to include firm size, survival and the method of calculating long run share returns. The results of the study illustrate the way in which the influence of research design biases may distort the results and conclusions obtained in a share performance study of takeovers. Using the authors' preferred method of measuring long run gains using a buy-and-hold returns (BH) measure and conditioning the control portfolios for the high survival characteristics of the experimental sample, results are obtained which are consistent with a reasonably information efficient market. Using a monthly rebalanced measure (RB), whether or not it is matched to a survival conditioned control portfolio presents significantly different results in line with studies which find a decline in share returns over time and an "efficient-market anomaly" (e.g., Agrawal et al., 1992). In a similar vein Simmonds (2003) compares buy and hold abnormal returns (BHAR) and cumulative abnormal returns (CAR) under a bootstrapping procedure controlling for biases similar to those identified in Brown and da Silva Rosa over the bid period and finds that the choice of BHAR or CAR to measure returns will have a significant impact on results.

da Silva Rosa, Izan, Steinbeck and Walter (2000) investigate the effect of method of payment in Australian takeovers, and whether the decision to offer cash, shares or some

¹² I.e., takeovers in which less than 100% of the target firm shares are acquired.

mixture of the two in a takeover offer is associated with a variation in share market returns over the short and long run. Utilising the RB method preferred in Brown and da Silva Rosa (1998), this study presents results comparable to Brown and da Silva Rosa's, although the very different focus of the research and the breakdown of takeovers into different categories limits the comparability of the two studies. Results for cash bidders appear more consistent with an efficient market, with the report of relatively normal returns, when compared to the results for share offers. Share bidders produced relatively strong returns from three months prior to the bid to three months following the bid and relatively weak long run returns following this period. This suggests that there may be complicating factors in the operation of an informationally efficient market.

2.2.2 Efficient Market Sceptics

Agrawal, Jaffe and Mandelker (1992) present results which indicate negative long run stock returns over a period of five years following a merger. This is said to confirm the "efficient-market anomaly" of previous studies which indicate that positive bid period returns are not reflected in the long run market position. Controlling for the firm size bias later identified in Brown and da Silva Rosa (1998) is not sufficient to explain the contradiction of expected results, given an efficient market. In the light of Brown and da Silva Rosa (1998), the question remains whether the anomaly is still present if other potential biasing factors not considered in Agrawal et al. are controlled for.

In contrast to the previously discussed sharemarket performance studies, Gregory (1997) analyses abnormal return estimates of normal return models (e.g., CAPM) in addition to the abnormal returns favoured in other studies, adopting a total of six models for calculating shareholder returns in this context, over a period of two years. Despite the variety of measures employed, the results are clear and homogeneous, indicating that the post-merger share return performance of the sample is "unambiguously negative". This not only challenges the efficiency of the capital markets in which the sample firms operate, the study questions the ability to reconcile their empirical evidence with the

concept of managers engaging in shareholder wealth increasing behaviour, finding greater affinity with theories of ‘hubris’ or ‘managerialist’ theories of behaviour.

Brown, Finn and Hope (2000) investigate the association between the use of FRS 7,¹³ which allows provisions for some liabilities and losses relating to takeovers in the United Kingdom, accounting performance and long-run sharemarket performance. Their method is to perform a regression in which the long-run post-merger CAR of a firm is regressed against the level of acquisition-related provisions and the change in cash flows from operations.¹⁴ They found declining share price and accounting performance to be associated with increased provision taking behaviour. Although firms with lower provisions performed more strongly post-merger, the overall performance of sample firms remained negative in both cash flows and share returns. Unlike the accounting performance studies discussed in the previous section, Brown, Finn and Hope do not control for industry and economy-wide factors in their measure of cash flow (Gregory, 2000). Instead, an all-share index and size-decile matched returns are used as benchmarks against which share returns are adjusted.

2.3 Determinants of Economic Gains

The literature has suggested several possible determinants for economic gains arising from merger activity. These have been suggested in both studies of long-run sharemarket performance and accounting performance following a merger.

2.3.1 Method of Payment

A number of studies have tested whether the method of payment used in a merger transaction is correlated with the post-merger performance of firms. HPR, in a preliminary section of their study, did not find any evidence to support a relation. Although da Silva Rosa et al. (2000) do not find a significant association of bid period

¹³ Financial Reporting Standard.

¹⁴ Other controlling factors, such as method of payment, firm size and leverage are included in robustness tests.

returns with method of payment, they do find that cash bids have a superior long-term post-bid performance. This is due to an interaction of the tax and information-signalling explanations for the impact of the method of payment. The tax explanation is not relevant to an Australian study, as the taxable status of takeover proceeds is unaffected by method of payment. The information-signalling explanation predicts that a bidder will have a higher expected payoff given a cash bid, due to information-asymmetry and the 'lemons' problem affecting share bids.

In an accounting performance study, Linn and Switzer (2001) find that cash bids result in a significantly larger improvement in post-merger operating performance than stock bids. Similarly, Ghosh (2001) finds that cash bids result in superior post-merger performance, largely driven by increased sales growth, with no increase evident for those mergers financed by stock. Ramaswamy and Waagelein (2003) find insignificant results for method of payment, and posit that the financing of cash acquisitions by debt may temper the theoretical expectation of superior performance in cash financed mergers. Heron and Lie (2002) examine the theory that there may be earnings management from acquiring firms in the event of a stock bid, in order to boost the share price of the acquiring firm, and thus the amount being offered to target shareholders. This ought to lead to a correction in operating performance results in the post-merger period, leading to better results in those mergers which were financed by cash. However, Heron and Lie (2002) do not find evidence to suggest that there is increased earnings management in stock acquiring firms, nor do they find any differences in post-merger operating performance between firms which made cash, script or mixed bids. This is similar to the results produced by Eddey and Taylor (1999) in an Australian context, who find there is no significant change in the earnings management of target firms if directors decide to reject an offer rather than accept it. The results found by Heron and Lie do indicate, however, similar to Travlos (1987), that acquirers which make a cash bid outperform acquirers which make a stock bid in bid period share price returns.

Other studies do find evidence of earnings management in stock acquiring firms. In a US study, Erickson and Wang (1999) find evidence of earnings management immediately

prior to a merger for those firms who issue stock. They find a positive relation between the existence of income increasing earnings management and the size of the deal. They do not find evidence of earnings management from target firms, perhaps due to ignorance of the timing of a merger. Louis (2004) finds similar evidence of earnings management within stock acquiring firms in the quarter preceding a bid. Also looking at US mergers, Louis reports that some of the share return gains resulting from this earnings management is reversed in the weeks preceding a bid announcement, although this reversal is not complete. The study also finds that stock acquisitions are the main contributors to negative long-run sharemarket performance.

2.3.2 Industry Relatedness

Other papers within the literature have tested whether the degree of similarity between industries impacts on the post-merger performance of firms. This is an important issue, since the anticipation of gains resulting from a merger are largely expected to result from the appropriation of synergies when the two firms begin operating together. Given a greater degree of similarity between the industries in which the target and acquiring firms operate in, one would expect more synergies to arise following a merger, since there is greater opportunity to share facilities and knowledge. HPR, in an exploratory section of their study find some support for firms with high ‘business overlap’¹⁵ experiencing greater post-merger improvements in performance. Ghosh (2001) and Linn and Switzer (2001) also investigate this issue, although again it does not form the main focus of their studies. Both papers do not find a positive relationship between industry overlap and post-merger operating performance. Ghosh finds a statistically significant negative relation between industry relatedness and cash flow performance when using the market value of assets as a deflator, but insignificant results otherwise. Linn and Switzer find industry overlap to be insignificantly negative.

¹⁵ A classification (high, medium or low) made by Healy et al. based on the line of business undertaken by target and acquiring firms in their sample.

In contrast, Megginson, Morgan and Nail (2004) find that mergers which preserve or increase focus result in marginal gains to the merged firms, whereas significant losses accrue to those companies which engage in focus decreasing mergers. The authors use a revenue based Herfindhal Index to determine whether mergers increase or decrease focus, taking into account the influence of secondary businesses. Megginson et al. (2004) find these results using measures of sharemarket returns, cash flow returns and firm value, with a control portfolio of ten matched firms matched according to the principles set out in Barber and Lyon (1996). In contrast, Agrawal et al. (1992) find better stock return performance in diversified (conglomerate) mergers than more focussed (non-conglomerate) mergers.

2.3.3 Other determinants

Ramaswamy and Waegelein (2003) measure a number of these variables in their analysis of firm financial performance following mergers. Aside from industry relatedness and method of payment, the authors identify the existence of long-term performance plans,¹⁶ competition in the market for corporate control and whether the transaction is hostile or friendly as important determinants of the post-merger operating performance of firms. The existence of long-term performance plans is expected (and found) to impact positively on the post-merger financial performance of firms, since such plans encourage decisions which will benefit firms in the long-run. Increased competition in the market for corporate control¹⁷ is expected (and found) to have a significantly negative impact on firms' post-merger operating performance. Friendly takeovers are anticipated to produce more positive post-merger results than hostile takeovers, but yield insignificant results.

Clark and Ofek (1994) study the performance of takeovers of distressed firms, finding evidence which suggests that acquiring firms were unsuccessful in restructuring distressed targets following a takeover. This is indicated by a decline in operating

¹⁶ Ramaswamy and Waegelein (2003) define these as plans which attempt to lengthen the decision-making horizon of a manager by deferring compensation until the end of the award period. If managers depart prior to the end of the period, they forfeit the bonus.

¹⁷ This is measured by the timing of the acquisition, with competition said to have increased from 1983 onwards.

performance and long-run share returns following a merger. They use a similar measure to HPR when assessing the post-merger accounting performance of these firms, scaling earnings before interest, taxation and depreciation (EBITD) by sales revenue rather than the market value of assets. Clark and Ofek find that takeovers of distressed firms are less likely to involve hostile transactions than takeovers of healthy firms. This finding, in conjunction with their finding that distressed mergers suffer relatively poor post-performance provides a contrast to the expectation of stronger performance arising from friendly transactions suggested by Ramaswamy and Waagelein (2003).

Other studies have identified more factors which may impact on the post-merger performance of firms. In a study looking at bid period CARs, Campa and Hernando (2004) find that firms which are in heavily regulated industries or industries previously under government control yield lower returns than firms operating in unregulated industries. Bugeja and Walter (1995) suggest that the level of managerial ownership may be negatively associated with target bid period returns, however the study does not find an association between the two variables. Singh (1998), in a theoretical study, finds that bidders with a 'toehold'¹⁸ in a target firm bid more aggressively for a target, resulting in a higher return for the target. This contrasts with the empirical findings of Bugeja and Walter (1995), who find a negative relation between prior bidder ownership and bid premium, due to less external shareholders being required to approve a bid. Ghosh and Jain (2000) find a significant increase in financial leverage in combined firms following a merger. This supports suggestions that an increased capacity to borrow is a potential gain arising from a merger (e.g., Sharma and Ho, 2002). Krishnan and Park (2002) find that the reduction of a combined firm's workforce post-merger has a negative impact on the ROE of merged firms. This is contrary to the expectation that the consolidation of workforces between target and acquiring firms will introduce synergistic improvements in operating performance. Moeller, Schlingemann and Stulz (2004) investigate the impact of firm size on the share returns of acquiring firms immediately following an announcement. They find that small firms consistently outperform large firms in this area, a finding which is robust in different time periods and controlling for other factors

¹⁸ A 'toehold' is the ownership of shares in a target by a bidder prior to a takeover attempt.

relating to the characteristics of the takeover transaction and the firms involved, such as method of payment and liquidity.

This chapter has outlined previous research on changes in the post-merger performance of firms, looking at both sharemarket and accounting performance measures and the determinants of any gains or losses resulting from these transactions. The next chapter will develop the hypotheses which will form the basis for the analysis performed in this study.

CHAPTER THREE

HYPOTHESIS DEVELOPMENT

This chapter develops the hypotheses which were tested in the course of this study. The first of these hypotheses relates to changes in the performance of all merged firms, and the second, third and fourth hypotheses relate to the relation between characteristics of the merger transaction itself and the long term performance of merged firms.

3.1 Merger Hypothesis

There are a number of reasons for expecting that the performance of merged firms will improve subsequent to a takeover. The first of these is the expectation that firms make acquisitions in order to make a gain. Assuming that managers are acting in the best interests of their firm, they ought to purchase those firms which they expect will have an improving, or at least constant, operating performance following the acquisition. If managers' decisions are rational and made on the basis of reasonable information, then one would expect that, on the whole, the operating performance of merged firms will remain constant or improve. There is also an expectation that some synergies between the two firms may be achieved, enabling the reduction of costs or the capture of additional product markets, which ought to lead to improved performance. Such synergies could occur in a number of ways, including the sharing of facilities and overheads between companies, the opportunity to participate in different geographic areas, and the sharing of knowledge and expertise. Jensen and Ruback (1983) suggest a number of ways in which synergies might be generated:

“realisation of economies of scale, vertical integration, adoption of more efficient production or organizational technology, increased utilisation of the bidder's management team, and reduction of agency costs bringing organisation-specific assets under common ownership.” (Jensen and Ruback, 1983 p.23)

Other benefits suggested by Jensen and Ruback include the ability to use tax shields, avoidance of bankruptcy, improved leverage, and the elimination of inefficient target

management. Some benefits suggested by Sharma and Ho (2002) include the ability to raise finance at a lower cost and the combination of complimentary skills between target and acquiring firms.

Jensen (1986) outlines a free cash flow theory of takeovers, which suggests that managers prefer to invest in unprofitable projects, rather than distributing free cash flow to shareholders of the firm. Jensen's framework suggests that free cash flow which is invested in a takeover is likely to result in less waste of resources than investment in internal projects¹⁹. Additionally, given the well-attested positive abnormal share returns over the bid period for target firms outlined in the previous section, it is reasonable to expect an improvement in the performance of merged firms subsequent to a merger, given a degree of informational efficiency in capital markets. Conversely, if performance is found not to improve, or deteriorates, it may indicate an inefficient market. Hence, Hypothesis 1 (H1) is derived:

H1: *The long-run operating performance of merged firms will improve following a takeover.*

3.2 Financing Hypothesis

There is also good reason to expect that the post-merger performance of takeovers will differ according to the choice of financing the acquisition²⁰. There is evidence in the literature which indicates that a cash offer is associated both with stronger post-merger share return performance (e.g., da Silva Rosa et al., 2000) and stronger accounting performance (e.g., Linn and Switzer, 2001) than a stock offer. Theory suggests that this is the case (e.g., Myers and Majluf, 1984), as managers are more likely to offer their firm's shares for payment if they believe them to be overvalued. If the acquiring firm's

¹⁹ The framework also assumes that increases in dividends can be undesirable due to an adverse reaction if dividends are reduced in the future; and that there is an optimal level of leverage which can limit the use of free cash flows for debt servicing and share buy-backs, making it unlikely that all free cash flow will be used on these alternatives.

²⁰ Although Ramaswamy and Waegelien (2003) suggest that the direction of this relationship may be less clear due to the potential for additional debt financing costs for cash transactions.

shares are overvalued, then one may expect a correction of this overvaluation over the long run, adversely affecting the post-merger share returns. Additionally, the overvaluation may have been the result of unusually high and temporary pre-merger performance, which may level out following the merger, adversely affecting post-merger accounting performance. This phenomenon can be seen in studies which provide evidence of earnings management prior to stock based takeover offers (e.g., Erickson and Wang, 1999; Louis, 2004), suggesting that there ought to be a reversal of any upward revision of discretionary accruals in post-merger periods. This will affect any accrual measures of accounting performance. It is important to investigate whether the results found overseas using approximations of cash flows are also true in an Australian regulatory environment and using a direct cash flow measure. For these reasons Hypothesis 2 (H2) is proposed:

H2: *The long-run operating performance of merged firms will improve further following a takeover if the method of payment is cash.*

3.3 Industry Overlap Hypothesis

Similarly, it is anticipated that merged firms will experience a greater improvement in performance if there is a greater degree of industry overlap between the two firms. Again, there is evidence in the literature to suggest that this is the case (e.g., Megginson, Morgan and Nail, 2004). Intuitively, the introduction of synergies discussed in the development of H1 would have a greater performance-increasing impact on these firms as there is more potential to pool resources.²¹ Additionally, a high degree of industry overlap should indicate that the acquiring firm has a greater degree of familiarity with the target industry. This familiarity ought to result in a reduced likelihood of overpayment, contributing to an expectation that greater industry overlap will result in superior post-merger operating performance (Jensen, 1986 cited in Agrawal et al., 1992). For instance, the analysis of the takeover process by Roll (1986) can be applied in this case to

²¹ Ramaswamy and Waagelein (2003) counteract this by suggesting that downsizing and cuts may have an adverse effect on employee morale, possibly impacting performance detrimentally.

demonstrate how familiarity with the target industry may assist an acquiring firm in avoiding overpayment. Roll (1986) sets out three steps in the takeover process. First, the bidding firm identifies a potential target. Second, a valuation is made of the target, taking into account such factors as non-public information and potential synergies and savings that could result from a merger transaction. Third, this valuation is compared to the value of the firm on the market, with the decision to make a bid contingent on the value of the firm being greater than its present market price. It is in the second step of this process that superior knowledge of the target and an enhanced ability to accurately value a firm will result in a reduced likelihood of overpayment²². This leads to Hypothesis 3 (H3):

H3: *The long-run operating performance of merged firms will improve further following a takeover if there is a greater degree of industry overlap between the firms.*

3.4 Friendly Merger Hypothesis

Another distinction which could be expected to impact on the degree to which firm's performance improves following a merger is whether the acquisition is hostile or friendly, although the evidence in this area is not so clear (e.g., HPR; Ramaswamy and Waagelein, 2003). Ramaswamy and Waagelein (2003) suggest that one would expect stronger performance for a friendly transaction since there are no "bad feelings" which need to be dealt with subsequent to a merger taking place, and due to a friendly transaction signalling a willingness to work together. This explanation assumes that there is no change in management immediately following the merger. A change in management is more likely given a hostile transaction, and it is unclear what impact this may have on post-merger performance. There will presumably be an adjustment period for new management which could dampen performance in the period immediately following a takeover, which may depend on the expertise and industry familiarity of the incoming management. However, the introduction of new ideas and management style may have a

²² A counterargument may also be made that a bidding firm in the same industry as its target may be prepared to pay a premium to strengthen its market share. If this occurs, an overpayment is more likely, counteracting the expectation of reduced overpayment outlined above.

positive impact on the performance of a firm, perhaps immediately. This benefit is suggested by Jensen and Ruback (1983), who cite removal of inefficient target management as a possible benefit from a merger. Jensen and Ruback also suggest that management resistance to a takeover bid will improve the short run returns for the target shareholders, forcing the bid up, provided that the bid is not defeated altogether. This could also, however, have a negative impact on the post-merger performance of the combined firm, if a bidder has overpaid for a target firm, or paid more than they would have in a friendly bid.

The findings by Clark and Ofek (1994), that takeovers of distressed targets are more likely to be involved in friendly acquisitions and have more negative post-merger performance than healthy targets adds another important caveat to the proposed hypothesis. In this situation the failure to successfully restructure a failing firm outweighs the additional synergies which may arise from increased cooperation. Although there are clearly arguments to be made for each side, there is perhaps more to indicate that friendly transactions lead to more positive post-merger results than hostile transactions. This leads to Hypothesis 4 (H4):

H4: *The long-run operating performance of merged firms will improve further following a takeover if the takeover is friendly.*

These four hypotheses form the basis of the remainder of this study. The next chapter will outline how these hypotheses are tested.

CHAPTER FOUR

RESEARCH METHOD

This chapter discusses the method employed to investigate the hypotheses outlined in the previous chapter. The performance measures of interest will be discussed and defined, followed by discussion of the control group and the method of analysing the results to assess the hypotheses.

4.1 Performance Measures

The performance of merged firms subsequent to a merger was measured over a period of three years, with a corresponding period of three pre-merger years measured in order to detect changes from pre- to post-merger performance. This allows comparison with the majority of accounting performance studies in this area, which tend to report either five years (e.g., Healy et al., 1992) or three years (e.g., Ghosh, 2001; Powell and Stark, 2004) of postmerger data. Additionally, as Manson et al. (2000) note, the measurement of operating performance “on a multi-period basis” is important as it mitigates concerns over ‘unsmoothed’ cash flow measures and the possibility that operating gains may surface after a few years. The first year in which a target is consolidated is excluded from analysis because of differences in the timing of the takeover. Since profits are consolidated from the date of a takeover, only part of the target profits and cash flows would be included in the financial statements in the year of takeover. The following two sections outline the accounting performance and sharemarket performance measures being used in this study.

4.1.1 The Consolidation Process

For the three years of pre-merger performance measures used in this study, a “proforma pre-merged firm” was created by combining data from target and acquiring firms. This was done by performing a consolidation procedure on the accounting data collected. For periodic items, such as profit and loss items and cash flow information, the corresponding

target and acquiring firm values for each item were added together. This produced a proforma pre-merged statement of financial performance and statement of cash flows. The same procedure was used on corresponding balance sheet items to produce a proforma pre-merged statement of financial position. The newly consolidated financial statement data was approximately equivalent to the consolidated figures reported by the combined firm following a merger²³, allowing comparability between pre- and post-merger data.

4.1.2 Accounting Measures

Before discussing which accounting measures are used in this study, the method of scaling accounting performance measures shall be considered, as will the method of cumulating these measures over the pre- and post-merger periods. Healy et al. (1992) advocate the use of a market value of assets measure, a measure adjusted to remove the effect of the change in value around the announcement of the bid. The market value of assets is taken to be the market value of equity less the book value of debt, which is assumed to be equal to the market value of debt. The advantages of a market value of assets measure is that it is unaffected by financing method and asset write-ups, and allows greater intertemporal and cross-sectional comparability. One problem with using this measure is a potential circularity in using a market based measure to scale the operating performance measure when the relation between stock returns and operating performance is the matter of interest²⁴. Also, as Powell and Stark (2004) note, the market value of a firm does not only incorporate the current value of assets, but also all the assets that a firm is expected to acquire. In contrast, the book value of debt does not include the expected value of future debt. Hence, the Healy et al. (1992) measure is really the market

²³ Strictly speaking, the consolidation process should also reverse the effects of transactions between the acquiring and target firms. Since this information is not publicly available, it was not possible to incorporate this into the consolidation process used in this thesis. This may create some bias, particularly in testing H3, since target and acquiring firms in similar industries are more likely to enter into transactions with each other pre-merger than those firms in different industries.

²⁴ As Ghosh (2001) notes, studies such as Agrawal et al. (1992) find that the market value of acquiring firms declines in the post-merger period. This depreciation suggests that the use of a market value of assets measure will cause improvements in a cash flow ratio even if cash flow itself does not improve, since the denominator is shrinking.

value of current and expected future assets less the future value of liabilities.²⁵ Unless the market anticipates that expected future assets are equal to expected future debts, the market value of asset measure will not be accurate. Ghosh (2001) utilises sales as an alternative deflator, and Powell and Stark (2004) suggest that book value of assets may also be used as a deflator, adjusted for the presence of goodwill. Due to the limitations of using a market value of assets measure, the ratios outlined below shall be used instead. By utilising a variety of deflators (e.g., sales revenue and the book values of equity and assets), there is an opportunity to test whether the choice of deflator is biasing the results.

One major advantage of using accounting numbers as the denominator for accounting performance ratios is that it allows a relatively simple method of aggregating data across periods. For this study, cumulative ratios across one, two or three years preceding and immediately following a merger are used to determine changes in post-merger performance. In effect, this is producing one pre-merger financial reporting period and one post-merger financial reporting period for comparison. This involves adding those measures which appear in the profit and loss accounts or cash flow accounts across all periods in the pre- and post-merger periods. For instance, if the measure of interest is ROA measured over a three year period, then operating performance for each year is added and the average of the opening assets for the first year and the closing assets for the third year is taken (i.e. year -4 for 3 years before, year 0 for all post-period performance). A similar procedure for ROE is used for measures scaled by assets (using equity less preference share capital rather than assets). For measures scaled by sales revenue, this involves dividing the sum of the performance measure over the period by the sum of sales revenue over the period.

In contrast to the majority of previous studies on accounting performance which have concentrated primarily on a single measure of accounting performance²⁶ (e.g., HPR;

²⁵ The Market Value of Equity = (Present Assets + Future Assets) – (Present Liabilities + Future Liabilities). If present liabilities are deleted from both sides of this equation, Estimation of Market Value of Assets = (Present Assets + Future Assets) – Future Liabilities.

²⁶ Even those studies which use more than one measure of accounting performance (e.g., Manson et al., 2000; Powell and Stark, 2004) use variations of the same measure of performance. For instance, the

Switzer, 1996; Ghosh, 2001), this study utilises a variety of measures of operating performance. The following performance measures will be used as different ways of measuring the pre- and post-merger performance of takeovers, and are summarised in Table 4.1.1. The first of these is the cash flow measure adopted by HPR and a number of subsequent studies (HPR_{CF}). This is calculated by taking sales, subtracting cost of goods sold and selling and administrative expenses and adding back depreciation and amortization expenses. This is not strictly speaking a cash flow measure, since it does not take into account changes in working capital. Essentially, this measure is an estimate of earnings before interest, taxation, depreciation and amortization (EBITDA). For this study, EBITDA was used as a proxy for this measure, since cost of goods sold figures were not reported under Australian accounting standards until the issue of AASB 1018,²⁷ effective from the June 2001 financial year. EBITDA is calculated by taking operating profit before tax and adding back the interest, depreciation and amortization expenses. Using this measure of performance allows a comparison of results with previous research (e.g., Switzer, 1996; Manson et al., 2000; Ghosh, 2001; Powell and Stark, 2004). Two measures involving HPR_{CF} are reported, one scaled by the average of opening and closing assets for the period, and another scaled by sales revenue, as discussed earlier in this section.

The second measure is a 'pure' operating cash flow measure, adding back interest and tax paid to and subtracting interest received from operating cash flows (OCF), taken from the Statement of Cash Flows from the annual report of sample and control firms. Unlike the HPR measure, this is a direct measure of the operating cash flow of a firm. The availability of a direct measure of operating cash flows represents a considerable advantage of studying this phenomenon in Australia when compared to previous overseas studies, where no direct measures of operating cash flows have been used. Again, the measures of interest are ratios of OCF to average assets and sales revenue.

measures which Powell and Stark (2004) use are pre-depreciation profit and pre-depreciation profit adjusted for changes in working capital.

²⁷ The revision of this standard required that companies reporting sales of goods also report the cost of goods sold.

Table 4.1.1 – Calculation of Accounting Ratios

Accounting Ratio Used	Method of Calculation
HPR _{CF} /Sales	$\text{HPR}_{\text{CF}}/\text{Sales} = \frac{(\text{OPBT} + \text{Interest Expense} + \text{Depreciation} + \text{Amortisation})}{\text{Sales Revenue}}$
HPR _{CF} /Assets	$\text{HPR}_{\text{CF}}/\text{Sales} = \frac{(\text{OPBT} + \text{Interest Expense} + \text{Depreciation} + \text{Amortisation})}{(\text{Total Assets}_n + \text{Total Assets}_{n-1})}$
OCF/Sales	$\text{OCF}/\text{Sales} = \frac{(\text{OCF} + \text{Interest Paid} + \text{Income Tax Paid} - \text{Interest Received})}{\text{Sales Revenue}}$
OCF/Assets	$\text{OCF}/\text{Assets} = \frac{(\text{OCF} + \text{Interest Paid} + \text{Income Tax Paid} - \text{Interest Received})}{(\text{Total Assets}_n + \text{Total Assets}_{n-1})}$
ROA	$\text{ROA} = \frac{(\text{OPAT} + [1 - \text{tax rate}] * \text{Interest Expense})}{(\text{Total Assets}_n + \text{Total Assets}_{n-1})}$
ROE	$\text{ROE} = \frac{(\text{OPAT} - \text{Preference Dividends})}{([\text{Total Equity} - \text{Pref Share}]_n + [\text{Total Equity} - \text{Pref Share}]_{n-1})}$
Profit Margin (PM)	$\text{PM} = \frac{(\text{OPAT} + [1 - \text{tax rate}] * \text{Interest Expense})}{\text{Sales Revenue}}$
Asset Turnover (AT)	$\text{AT} = \frac{\text{Sales Revenue}}{(\text{Total Assets}_n + \text{Total Assets}_{n-1})}$
Current Ratio (CR)	$\text{CR} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$
Operating Cash Flow Ratio (OCFR)	$\text{OCFR} = \frac{\text{OCF}}{\text{Current Liabilities}}$
Common Earnings Leverage (CEL)	$\text{CEL} = \frac{(\text{OPAT} - \text{Preference Dividends})}{(\text{OPAT} + [1 - \text{tax rate}] * \text{Interest Expense})}$
Capital Structure Leverage (CSL)	$\text{CSL} = \frac{(\text{Total Assets}_n + \text{Total Assets}_{n-1})}{([\text{Total Equity} - \text{Pref Share}]_n + [\text{Total Equity} - \text{Pref Share}]_{n-1})}$
Cash Flows from Investing (ICF) to Assets	$\text{ICF}/\text{Assets} = \frac{\text{ICF}}{(\text{Total Assets}_n + \text{Total Assets}_{n-1})}$
Cash Flows from Financing (FCF) to Assets	$\text{FCF}/\text{Assets} = \frac{\text{FCF}}{(\text{Total Assets}_n + \text{Total Assets}_{n-1})}$

The following abbreviations are used in this table: OPBT is operating profit before tax; OCF is operating cash flows; OPAT is operating profit after tax*; ROA is return on assets; and ROE is return on equity. The subscripts n and n-1 respectively indicate that the item is being measured at the end and beginning of the period of interest. This period may be an individual year or over multiple years, as described in section 4.1.2.

* When OPAT is used, two ratios are calculated. The first excludes extraordinary items and the second includes extraordinary items.

Thirdly and fourthly, return on assets (ROA) and return on equity (ROE) are used. ROA is defined as operating profit after tax, plus the after tax interest expense,²⁸ all divided by the average of opening and closing total assets for the year. ROE is defined as operating profit after tax, less preference dividends, all divided by the average of opening and closing total equity, less the average of opening and closing preference share capital for the year. Both of these measures are calculated using both operating profit before extraordinary items and operating profit including extraordinary items. Using a measure without extraordinary items gives a better measure of the ROA and ROE that is expected to occur on a recurring basis. However, a measure that includes extraordinary items perhaps better captures the actual economic effects being experienced in the firm at that time.

Profit margin (PM) is the fifth measure used, and is calculated as operating profit after tax, plus the after tax interest expense, divided by sales revenue for the period. These last three measures are measures of accrual accounting performance, which have generally not been used in previous studies of this nature. They are included in this study for a number of reasons. The first of these is that the accounting standards to account for takeovers in this period in Australia required the use of purchase accounting, in contrast to the situation in the United States at this time, and at the time previous studies in the US were performed, when a choice between purchase and pooling of interest accounting was allowed. This uniformity allows comparison between different firms in the post-merger period. A second reason is the importance of 'bottom line' accounting profit measures. Despite a greater potential for earnings management and the importance of positive cash flows for a firm's survival, the underlying accrual accounting profit is still an important benchmark by which firms are judged. Unfortunately, it was not possible to calculate the amortisation of goodwill specifically relating to the takeover transactions of interest in this study, due to insufficient information being available in the financial statements. If the effects of this amortisation expense could be excluded from accrual profit transactions, it would aid comparability between sample and control firms.

²⁸ This is calculated as $(1 - \text{tax rate}) * \text{interest expense}$.

In addition to these performance measures, other accounting ratios were used in the study, to provide a description of particular characteristics of the firms in the sample group. These measures will be aggregated across years in the same manner used to aggregate performance measures, unless otherwise indicated. The first of these measures is asset turnover, calculated as sales revenue divided by the average of opening and closing assets of the period. This measure indicates how the efficiency of firms changes following a merger. The second measure is the current ratio, calculated as the sum of current assets for each period divided by the sum of current liabilities for each period. This measure indicates how the ability to cover short term debt may change following a merger. The third measure is an operating cash flow ratio, which is calculated by operating cash flow divided by the average of opening and closing current liabilities for the period and provides an alternative measure of ability to cover short term debt. Unlike the cash flow measures used to measure performance, this measure does not exclude interest paid and received or tax paid, since this ratio is measuring an ability to pay off current liabilities and these amounts represent actual cash inflows or outflows to the company in operating activities.

Two leverage measures are also included in this study. The first of these is a common earnings leverage ratio, calculated as operating profit after tax, less preference dividends, all divided by operating profit after tax plus the after tax interest expense. This is calculated both including and excluding extraordinary items. This provides a measure of how financing by debt and preference share capital changes over the pre- and post-merger period. The second is a capital structure leverage ratio, calculated as the average of opening and closing assets for the period divided by the average of opening and closing total equity less preference share capital. This provides a measure of how the company is financed in the pre- and post-merger periods, whether by debt and preference share capital, or by common shareholder equity and retained profits.

The final two ratios are cash flows from financing to total assets and cash flows from investing to total assets. Again, both of these measures are scaled by an average of opening and closing assets. These ratios give an indication of how a firms investing and

financing activity changes from the pre-merger period to the post-merger period. The financing cash flows will indicate whether funds are being raised or repaid, and the investing cash flows will indicate whether assets are being bought or sold. For instance, large positive investing cash flows following a merger may indicate that assets no longer needed in the target are being sold, possibly as the result of synergies between the companies.

4.1.3 Share Return Measures

There are two types of stock return measures which need to be considered, the short-run measure of bid period returns and the long-run measure of post-merger stock returns. The short-run performance measures are not subject to as many potential biases as long-run performance measures. Short run performance is generally measured by cumulative abnormal return (CAR) or similar measure (e.g., da Silva Rosa et al., 2000). As short-run returns are smaller and not as vulnerable to the inherent biases of long-run returns, it is still appropriate to use this measure, however since buy and hold abnormal returns (BHAR) are used to measure long-run performance in this thesis for reasons outlined below, these will also be used to measure short-run returns. In some previous studies of bid-period stock returns in Australia (e.g., Bugeja and Walter, 1995; da Silva Rosa et al., 2000), abnormal returns have been calculated using the All Ordinaries Accumulation Index (AOAI) as a proxy for expected return. Since this use of a daily index is “reasonably robust” to refinements in the short run (da Silva Rosa et al., 2000, p.76, citing Brown and Warner, 1985), the use of this measure as a proxy will both produce reasonable accuracy in measurement and enable comparability with previous literature. BHARs will be computed over the bid period, in order to confirm whether or not the finding of positive bid period returns in other studies is applicable to this sample. The long-run performance of firms following a merger ought to be reflected in the reaction of the market to the announcement of a takeover bid in the short run in an efficient market. Hence, the degree of correspondence between bid period sharemarket performance and accounting and sharemarket performance in the long run will provide a test for the degree of information efficiency present in the market.

There are more issues to consider when measuring postmerger long-run sharemarket performance, as this introduces a number of potential biases which must be overcome in order that results are not biased by measurement error. Studies such as Brown and da Silva Rosa (1998) and Simmonds (2003) show that there are considerable differences in the results produced when using different measures of long run performance. Brown and da Silva Rosa (1998) identify a number of such concerns for the two main methods of long-run return calculation, rebalanced returns (RB) and buy and hold returns (BH). Both of these methods are subject to new listing bias, and skewness bias, whilst RBs are additionally subject to a measurement bias, and BHs are also subject to a rebalancing bias. Brown and da Silva Rosa (1998) prefer the use of BH as the biases affecting this measure are more easily controlled for and less severe than for RBs. The importance of conditioning a sample portfolio for survival and firm size characteristics by means of a bootstrapping technique is demonstrated by Brown and da Silva Rosa. As Simmonds (2003) notes, however, bootstrapping will not control for differences between the two measures. For these reasons, long-run share market performance is assessed using the BHAR²⁹ of the target and bidder firms, as well as for the control sample. In order to control for the short run returns during the bid period biasing the long run share returns, one year of returns surrounding the effective date³⁰ of the takeover is excluded from analysis. Pre-merger returns are calculated up to six months before the effective date, and post-merger returns are calculated from six months after the effective date. The returns are calculated across one, two and three years to enable comparison with the accounting ratios.³¹

²⁹ BHAR over a period [a, b] is calculated as $BHAR_{i,(x,y)} = [\prod_{t=x}^y (1 + ar_{it})] - 1$. Where ar_{it} is the discrete abnormal return of the stock for firm i in period t . ar_{it} is given by $r_{it} - E(r_{it})$, where r_{it} is observed return and $E(r_{it})$ is expected return. Expected return is measured using the AOAI.

³⁰ i.e., the date at which the acquirer begins to consolidate the target firm.

³¹ However, due to the difficulty of combining pre-merger stock returns into one 'consolidated' measure, only acquiring firm returns are used in the regression analysis.

4.2 The Control Group

The control group is a selection of firms, matched to the sample “proforma pre-merged”³² firms first by industry, then size and then by similarity of performance in the year preceding the takeover. This is used, rather than the industry median measure adopted by HPR because it has the advantage of selecting only those firms which are the most similar to the sample firms, reducing potential pre-performance and size biases identified by Ghosh (2001). A further selection criteria for control firms was the requirement that the firm be listed on the Australian Stock Exchange (ASX) over the same time period that sample firms were listed, within the three year window either side of the acquisition. This ensured that for each year of available sample data, the sample firm’s performance could be adjusted against the same control firm to produce a measure of abnormal performance. It is unclear what effect this requirement may have on survivorship bias. On the one hand, it ensures that control firms attain at least the minimum survivorship characteristics of the sample firms. On the other hand, it also means that the control group is populated with firms that survive longer, on average, than sample firms within the three year post-merger period. However, given the advantages of this selection requirement and the uncertain implications of this restriction on survivorship bias, the requirement was retained.

Two firms have been selected for each pair of sample firms, in order to reduce the likelihood that factors specific to one particular control firm are driving the results. The two controls for each firm were placed in a different control group, creating two complete control groups, each containing the same number of firms as the acquiring firm sample. The best match for each firm was placed in control group one and the second best in control group two where possible, subject to the conditions outlined below. Abnormal performance was determined separately against each control group, with the results adjusted against control group one reported in chapter six, and results adjusted against control group two reported in the appendix. Where possible, control firms have only been selected once, however due to the small size of some industries, and the lack of

³² i.e., the combined acquiring and target firms.

other suitable control firms, this has not always been possible. Another exception to this was when an acquiring firm appeared in the sample more than once during the sample period. In this instance, the same control firms were generally matched to this firm, because they remained the best matches for the sample firm and to ensure some consistency in abnormal performance measures across the same measures for the same firm in the same period.³³ Where a control firm was selected more than once, an effort was made to place the control in a different group. Sample firms were also not selected as control firms.

4.3 Analysis

The framework outlined in HPR, and adopted by a majority of subsequent studies in this area³⁴ will be used for the purpose of analysing the data. The basic HPR regression model is:

$$IAOP_{\text{post}} = \alpha + \beta IAOP_{\text{pre}} + \varepsilon \quad (1)$$

Where $IAOP_{\text{post}}$ is the post-merger performance of the merged firm and $IAOP_{\text{pre}}$ is the pre-merger performance of the combined target and acquiring firms, both adjusted against one of the control groups by subtracting the control's performance from sample firm performance.

The expectation is that β will capture the correlation between pre- and post-merger performance and so α will capture the actual improvements in post-merger performance resulting from the merger itself. This will be used to test H1. The expectation is that α will be positive, representing an improvement in post-merger performance. However, the subsequent hypotheses (H2, H3 and H4) outlined in Chapter Three represent an

³³ An exception to this is that some differences will arise when comparing a post-merger and pre-merger year for a different pair of sample firms with a common acquirer. In this case, the pre-merger performance will include the target firm's financial statement data and the post-merger performance will not.

³⁴ Even a study such as Ghosh (2001) adopts this method, despite advocating his own alternative, in order to provide comparison and contrast with other literature.

expectation that the direction and magnitude of α is contingent upon other characteristics of a takeover. Hence, these hypotheses will be tested to investigate the extent to which changes in post-merger performance are related to the method of payment, industry relatedness of the target and acquiring firms and the hostility or friendliness of a bid. These factors are first investigated individually and then cumulatively in the equations which follow.

Equation (2) is used to investigate H2, adding the variable CASH to differentiate takeovers where cash is offered as payment for a target from those where only shares or a mixture of cash and shares are offered.³⁵

$$IAOP_{\text{post}} = \alpha + \beta IAOP_{\text{pre}} + \gamma CASH + \varepsilon \quad (2)$$

The value for the variable CASH will be 1 when cash is offered and 0 otherwise. Equation (2) builds on the framework of (1) with the addition of coefficient γ to capture the association between the method of payment and post-merger operating performance. The expected sign of γ is positive, given the expectation outlined in H2 of greater gains in the post-merger period for those companies which use cash as a method of payment. Similar to (1), β will capture the correlation between pre- and post-merger performance and α will capture improvements in post-merger performance resulting from the merger which are not related to the method of payment.

Equation (3) employs a variation of (2) in order to test the impact that industry relatedness between target and acquiring firms has on the post-merger performance of firms.

$$IAOP_{\text{post}} = \alpha + \beta IAOP_{\text{pre}} + \delta INDUSTRY + \varepsilon \quad (3)$$

In (3), INDUSTRY is 1 if the target or bidder companies are in related industries and 0 otherwise. The coefficient δ should capture the degree to which the industry relatedness

³⁵ This is defined as being when cash is either the only payment option available, or where the target shareholder can elect to receive a cash payment. All other situations are classified as “other”.

of the target and acquiring companies impacts upon the post-merger performance of the combined firm. The expected sign of δ is positive, given the reasoning outlined in the development of H3, with a pair of firms engaged in related industries expected to experience a more positive change in performance following a merger than those engaged in unrelated industries. Again, β will capture the relationship between pre- and post-merger performance and α will capture the improvements in post-merger performance resulting from the merger that are not related to the method of payment.

Equation (4) uses a similar methodology to test what impact the friendliness or hostility of a merger transaction has on post-merger performance.³⁶

$$IAOP_{\text{post}} = \alpha + \beta IAOP_{\text{pre}} + \lambda \text{FRIENDLY} + \varepsilon \quad (4)$$

FRIENDLY will be 1 if the transaction is friendly and 0 otherwise. In (4), the coefficient λ captures the association between a transaction being friendly and post-merger performance. For the reasons outlined in the development of H4, λ is expected to be positive, indicating that those transactions classified as being friendly yield greater performance in the post-merger period. The coefficient β will capture the correlation between pre- and post-merger performance and α will indicate the changes in post-merger performance not related to the friendliness or hostility of a takeover transaction.

In addition to these individual tests, H2, H3 and H4 will also be tested cumulatively by means of equation (5), produced below:

$$IAOP_{\text{post}} = \alpha + \beta IAOP_{\text{pre}} + \gamma \text{CASH} + \delta \text{INDUSTRY} + \lambda \text{HOSTILE} + \varepsilon \quad (5)$$

³⁶ A bid is classified as friendly if the target directors' initial recommendation is that target company shareholders accept the takeover offer, otherwise the bid is considered hostile. This definition has some limitations, for instance it does not take into account the dynamic nature of the negotiation process and the willingness to merge given a high enough price. However, the ability of this variable to provide a general distinction between more and less co-operative transactions and the relative ease of measurement of this variable lead to the choice of this definition of a friendly transaction.

In (5), the expectation is that γ , δ and λ will capture the association between post-merger operating performance and method of payment, industry relatedness and whether a transaction is hostile or friendly respectively. The anticipated direction of all three coefficients is positive. The coefficient β captures the relationship between pre- and post-merger performance and α captures the changes in post-merger performance not related to the three other factors identified in the equation.

The next chapter will describe the method of collecting data for the study, as well as providing some descriptive statistics about the sample.

CHAPTER FIVE

DATA COLLECTION

This chapter will begin by outlining the nature of the data collected, the sources from which the data was drawn and the methods of data collection employed. The second part of the chapter will present information about the sample and control firms, including some general descriptive statistics.

5.1 Data Collection

5.1.1 Sample Selection

The sample of firms used in this study consisted of all successful takeovers with a bid announcement date between the January 1995 and December 1999. A takeover is successful if the acquiring firm consolidates the target firm in the period following the date of acquisition (year 0), having not consolidated the target firm in the previous period. By this definition, acquiring firms which were already consolidating a partly owned target and made a bid for some or all of the remaining shares were not included as part of the sample. The period from January 1995 to December 1999 was chosen to ensure that sufficient data was available for all sample firm years, as data is required for three years before and after the merger, not including the year of the merger itself. This period has been chosen since cash flow data will be available for all of the years from which data will be collected and to ensure that three years of post-merger data is available for each sample firm. One of the major advantages of conducting a study on cash flow performance in Australia is the availability of direct cash flow information, however such information has only been available in annual reports since 1992, when AASB 1026: Statement of Cash Flows was introduced. Since all year 0 reports have a balance date of 1995 or later, the earliest report required for cash flow information (year -3) will have this information available. A year 0 balance date of no later than 2000 means that the balance date of year 3 will be no later than 2003, ensuring that sufficient post-merger accounting information is available.

From an initial list of 280 takeover bids announced on Australian Stock Exchange (ASX) listed companies between 1995 and 1999, 37 were excluded due to a subsequent withdrawal of the bid and a further 51 were excluded because the bidding firm failed to gain control of the target. Of the 192 remaining bids, 97 were excluded from the sample because the bidding company was not listed on the ASX. This occurred when the bidding company was either a private company or an overseas based company. Two more bids were excluded as the same pair of bidder and target firms had already been included earlier in the sample period. A further 12 bids were excluded during the collection process. Of these, ten were excluded because the target firms were already being consolidated by the acquiring firm prior to the takeover bid³⁷ and one was excluded because it was discovered that the target had been acquired by a South African company rather than the ASX listed company of the same name. One further company was excluded because the target firm was suspended during the final year prior to consolidation, and did not produce a financial report during this year. This left 81 pairs of acquirer and target firms which met the criteria for inclusion in the sample for this study. This is summarised in Table 5.1.1.

Table 5.1.1: The Sample Selection Process

Description	Number Excluded	Number in Sample
Number of Takeover Bids: 1995-1999		280
Withdrawn Bids	37	
Unsuccessful Bids	51	
Number of Successful Bids		192
Non-ASX Listed Bidder	98	
Multiple Bids in Period	2	
Previously Consolidated Target	10	
Target Suspended	1	
Final Sample		81

5.1.2 Selection of Control Firms

Chapter Four outlined the selection criteria for the control firms to be matched to each pair of sample firms. Each control firm was matched to each pair of sample firms

³⁷ This was determined by checking the list of subsidiaries being consolidated by the acquirer in the pre-merger period, to see whether the target firm already appeared in this list.

according to industry, then size and then performance. There were two sets of control firms, with each target and acquiring pair matched to two controls. Control firms were selected using the Australian Stock Exchange (ASX) share tables included in *Shares* magazine. The market capitalisation of the bidder and target firms at the end of the month prior to announcing a takeover bid were collected from that month's share tables in *Shares*. These figures were added together to form a proforma merged market capitalisation for the two firms. The previous year's operating profit for each firm was also obtained from the tables, and was combined to form a proforma merged operating profit. The industry in which the acquiring firm operated was also taken from the tables.

Initially, at least two control firms were selected for each pair, selecting those firms listed within the same industry group in the ASX share tables which had a similar market capitalisation as the proforma merged market capitalisation prior to the month of announcing a takeover. The degree of similarity allowed depended upon the size of the industry and the size of the proforma merged market capitalisation. It was more difficult to find matches for particularly large or small firms and for industries which did not contain many listed firms. When more than two potential control firms with similar market capitalisation existed, the two firms with the most similar operating profit to the proforma merged operating profit were selected. In a number of cases it was later discovered that one or both of the control firms matched to a particular sample firm were not listed on the ASX in all of the years that their respective acquiring firms were listed. This occurred if a control firm was listed less than three years prior to year 0 or was delisted during the period. When this occurred the original control firms were dropped and replaced by the next closest matches which existed in the same period as the acquiring firm between three years before and three years after the merger.

5.1.3 Accounting and Company Information

This section will outline the data collection process for the accounting measures used in this study. Data on accounting information, such as cash flows, profit, sales and other figures which are available in a firm's financial report were hand collected from sample

and control firms' annual reports. The annual reports were taken from a University of Sydney database of all ASX company announcements since September 1996, or from the SIRCA ASX Library Collection if the report was released before that time. Data was collected for three years leading up to the merger and for three years following the merger, as well as balance sheet items for four years prior to the merger and the year of the merger itself in order to provide opening balances for those items in calculating ratios. Non-balance sheet data for the year of the merger itself was also collected, however year 0 itself is excluded in the tests. This is because the effects of the transaction itself will distort performance results, making comparison between years difficult. In addition, differences in the timing of mergers throughout the year would make comparison between firms difficult.³⁸ Control firms were also selected from the same period for the same reasons.

The relevant financial statement data was initially copied by hand from the electronic annual reports to a three page datasheet.³⁹ Once the datasheets had been completed, the data was then keyed in to a database file. This database file then went through a number of transformations to produce the reported results. First, a set of rules was created to calculate the ratios which are reported in these results. Additionally, ratios for pre-merger data were calculated for target and acquiring companies individually for each year, without the assumed consolidation, and are reported in section 5.2. The initial data was put through a consolidation process, in which the pre-merger accounting numbers⁴⁰ were added together for target and acquiring firms. Only those firm years which had both target and bidder data were included in the consolidation process. For instance, if an acquiring company had data available for three years leading up to a takeover, but its target only listed one year prior to a takeover, the second and third years prior to a

³⁸ Since under purchase accounting, the consolidated figures are only reported from the day of the merger.

³⁹ A copy of this data sheet can be seen in the Appendix.

⁴⁰ Some of the data collected was excluded from this process, if the aggregation did not make sense. In these cases, the combined firm used the data from the acquiring firm. For instance, the tax rate of the combined sample firm for any given year was simply the tax rate of the acquiring firm.

takeover were not consolidated. Following this process, a database consisting of the control firms and merged sample firms⁴¹ was produced.

Two additional databases were then created, both of which consisted of the calculated ratios reported in the next chapter. The first of these databases included cumulated ratios for each firm,⁴² consisting of ratios calculated over one, two or three years, coded as either being before year 0 or after year 0. The second database included single year ratios for the same firms. The ratios for the sample firms was then adjusted against the ratios of the control firms, creating two sets of abnormal ratios, each adjusted against one set of controls. During this process, if a control firm existed for a firm year but the corresponding sample firm did not then no abnormal performance measure was calculated.⁴³ The hypotheses were tested on the cumulated abnormal performance measures created in this process.

During the cumulation process, a number of checks were also performed to ensure that no keying errors had been made when entering the data. Instances where a field used in the calculation of ratios was zero were identified and verified by inspecting the datasheets. This was checked using both consolidated and non-consolidated data. If a denominator for a ratio was zero, that measure was excluded when analysing the data. Firms with missing years were also checked to ensure that they had not been overlooked in the data entry process. Outliers were identified for all ratios reported and checked against the datasheets to ensure that no keying errors had occurred. Where necessary the datasheet was also checked against the original financial reports.

⁴¹ The merged sample firms consisted of pro-forma consolidations from pre-merger periods and the actual acquiring firm figures post-consolidation. Firm years which did not meet the criteria for consolidation in the pre-merger period are not included in the merged sample firm data.

⁴² The cumulation process is described in Chapter 4.

⁴³ There were no instances where a sample firm existed but a control did not, since the selection criteria for control firms included being listed over the same period as the firm it was matched to.

5.1.4 Share Return Information

Share return data was collected from the Core Research Data (CRD) database.⁴⁴ Companies were tracked through time, code and name changes to ensure that the correct three letter ASX code had been entered for the bid announcement date and that long-run returns were calculated accurately. This was a particular concern for the control firms, as some of these firms changed their name at around the time of the bid to which they were matched. If no record of the ASX code was found on the bid date, company name and code changes were tracked and the correct code was entered. Once the returns were acquired, all daily returns of above 20% were checked, to ensure that no dilution such as a share merger, consolidation or split had occurred on that day. Where more than one security existed on a day, a three letter ASX code was preferred to a five letter code. If two five letter codes existed, this was investigated using ASX announcements and one of the codes was selected as the share to track.

5.2 Descriptive Statistics

This section presents some descriptive statistics for the sample and control firms used in this study. Only unadjusted figures are reported in this section, the abnormal accounting ratios are reported and discussed in Chapter Six. Eight tables are presented in the Appendix: Table A5.2.1 presents descriptive statistics for acquiring firms prior to a merger; Table A5.2.2 presents statistics for target firms prior to a merger; Table A5.2.3 provides statistics for combined sample firms;⁴⁵ Table A5.2.4 describes control group one; and Table A5.2.5 contains descriptive statistics for control group two. In addition, Table A5.2.6 describes the cumulative period ratios for combined sample firms and Tables A5.2.7 and A5.2.8 do the same for control groups one and two respectively. The main interest of this thesis lies in the abnormal ratios created by calculating the difference between the consolidated sample firms and one set of control firms, however the

⁴⁴ The CRD is provided to the University of Sydney via the Securities Institute Research Centre Asia-Pacific (SIRCA). CRD provides summaries of the Stock Exchange Automatic Trading System (SEATS).

⁴⁵ i.e., the consolidated accounts of the acquiring firm from Year 0 and after and the pro-forma consolidated accounts in the pre-merger period.

individual target and acquirer performances in the pre-merger period also present some interesting results. For all measures of performance, the median ratios of the acquiring firms are increasing from year -3 to year -1, indicating continual improvements in performance. In contrast, the median performance ratios for target firms decrease in most cases from year -3 to year -1. This indicates that acquiring firms are usually experiencing a period of strong financial performance leading up to a takeover, whereas targets are experiencing declines in financial performance.

Each table presents the number of observations available for every ratio for each year. These figures vary across years and measures due to the data requirements for a ratio to be calculated. Most of the variation is due to variation in existence of sample firms across time, however some of the variation results from the denominator in a ratio being zero. Table 5.2.1 shows the transaction characteristics of the takeovers contained in the sample. Of the 81 takeovers, 48 offered a choice of full payment in cash, 69 takeovers involved the acquisition of a firm in a related industry, and 40 recommendations to accept the bid were made.

Table 5.2.1 – Takeover Transaction Characteristics

Characteristic	Number of Transactions
CASH	48
INDUSTRY	69
FRIENDLY	40

Table 5.2.2 contains information about individual items of financial statement data for the acquiring, target and control firms used in this study in year -1. These tables show that target firms are, in general, considerably smaller than acquiring firms, using both assets and sales revenue as a measure of size. The combined mean size and performance of the target and acquirer firms is also closer to the mean size and performance of control group one than control group two, reflecting the more accurate matching of that control group.

Table 5.2.2 – Descriptive Statistics of Financial Statement Data in Year -1*Panel A: Acquiring Firms*

Item	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
OPBT	80	100,572	309,792	2,525,000	83,929	18,096	1,887	-87,052
OPAT (AE)	80	70,617	196,982	1,511,000	56,766	11,310	1,367	-87,052
OPAT (BE)	80	71,767	196,983	1,511,000	62,400	11,310	1,486	-87,052
Sales	72	1,018,872	2,306,941	17,696,000	1,164,695	161,996	48,232	1,947
Depreciation	76	56,640	197,076	1,630,000	34,754	4,709	692	20
Amortisation	67	7,366	11,793	60,500	7,374	1,940	569	0
Interest Exp.	71	22,294	54,901	407,000	21,000	4,843	600	13
Dividends	61	61,774	132,581	732,689	54,400	12,354	2,808	-33
Preference Div.	12	4,086	11,365	39,218	297	6	0	0
Total Assets	80	1,308,192	3,596,689	30,287,000	1,037,335	247,558	46,036	4,164
Current Assets	80	373,033	820,326	6,105,000	307,405	74,317	20,219	1,462
Goodwill	44	119,583	253,867	1,021,300	74,681	9,644	1,904	0
Cash	80	43,493	73,417	382,500	51,998	14,826	3,025	1
Total Liab.	80	692,446	1,868,029	15,480,000	594,306	137,614	16,700	64
Current Liab.	80	300,814	716,943	5,357,000	234,908	50,544	11,611	28
Total Equity	80	624,082	1,748,531	14,807,000	574,060	140,029	26,171	2,223
Issued Capital	80	279,788	622,817	3,267,400	139,556	35,910	18,302	218
Pref. Capital	12	13,511	45,783	158,879	522	2	0	0
Operating CF	80	134,129	480,002	4,090,000	105,814	16,098	675	-15,430
Interest Pd.	71	28,183	72,184	537,000	22,815	6,415	495	0
Interest Rec.	78	7,301	17,883	102,000	4,220	820	268	0
Tax Paid	54	32,736	108,363	751,000	23,854	5,752	470	-90,339
Investing CF	79	-126,333	393,373	403,700	-2,785	-18,600	-113,200	-3,218,000
Financing CF	77	14,512	197,367	639,697	32,909	1,526	-6,939	-640,902
Dividend Paid	58	55,791	120,867	735,910	48,842	9,856	2,439	-1,522

This panel reports financial statement information collected from the annual report of acquiring firms in the year before a merger. The following abbreviations are used in this table: OPBT is operating profit before tax; OPAT (BE) is operating profit after tax, excluding extraordinary items; OPAT (AE) is operating profit after tax, including extraordinary items; and CF is cash flows. All values reported are in thousands of Australian Dollars, rounded to the nearest dollar. Means have been calculated only using non-zero values. The numbers in the n. column indicate how many non-zero observations there were for each

Panel B: Target Firms

Item	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
OPBT	81	5,844	20,011	126,498	11,269	2,189	-1,192	-44,154
OPAT (AE)	81	3,499	15,381	88,810	7,890	1,388	-1,192	-44,815
OPAT (BE)	81	3,495	15,376	88,810	7,890	1,388	-1,192	-44,815
Sales	71	192,207	424,428	2,939,495	194,261	44,573	13,338	0
Depreciation	77	5,086	9,244	51,299	5,543	1,010	258	3
Amortisation	70	3,287	8,642	64,439	2,352	514	130	0
Interest Exp.	75	3,601	8,726	54,029	2,775	568	82	0
Dividends	45	6,208	8,246	45,703	7,493	3,839	894	0
Preference Div.	5	122	255	578	28	5	0	0
Total Assets	81	172,353	267,932	1,225,845	200,097	43,676	15,984	453
Current Assets	81	59,092	126,986	768,683	61,815	13,006	5,244	12
Goodwill	37	11,536	19,488	83,654	9,786	2,651	554	0
Cash	78	6,126	12,554	81,257	6,062	2,079	491	-1,182
Total Liab.	81	86,589	159,830	763,294	80,211	20,046	4,309	34
Current Liab.	81	35,716	70,070	446,392	40,869	10,315	2,591	34
Total Equity	81	86,464	129,049	629,860	119,786	26,556	8,866	149
Issued Capital	81	68,946	229,848	2,017,004	47,309	16,137	7,100	573
Pref. Capital	10	47,191	130,589	416,533	8,194	50	0	0
Operating CF	81	12,259	21,798	106,129	14,505	3,249	85	-3,858
Interest Pd.	71	3,895	8,828	54,189	3,340	902	135	3
Interest Rec.	74	1,550	6,066	47,117	588	228	87	2
Tax Paid	45	4,377	6,886	35,657	4,464	2,140	673	-90
Investing CF	79	-17,485	34,762	57,990	-905	-3,381	-19,669	-204,285
Financing CF	79	4,286	25,377	174,279	7,809	55	-3,305	-51,285
Dividend Paid	45	5,010	8,185	47,775	6,914	2,283	688	-10,408

Information on how to read this table is contained beneath Panel A.

Panel C: Control Group One

Item	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
OPBT	81	142,005	676,370	5,320,000	43,968	9,233	-1,295	-137,048
OPAT (AE)	81	93,565	445,680	3,488,000	33,598	6,456	-1,295	-183,800
OPAT (BE)	81	93,326	445,746	3,488,000	33,598	6,456	-1,295	-183,800
Sales	80	1,109,966	2,644,725	17,571,000	819,607	165,131	24,753	0
Depreciation	80	63,768	267,655	2,290,000	33,430	4,100	605	0
Amortisation	76	11,381	35,027	212,000	7,194	1,077	74	0
Interest Exp.	75	28,070	77,323	578,000	14,099	3,342	350	0
Dividends	71	104,434	512,076	4,247,000	46,632	7,315	670	0
Preference Div.	47	1,063	6,136	41,523	0	0	0	0
Total Assets	81	1,493,496	4,038,806	27,682,000	800,338	166,973	38,618	654
Current Assets	81	444,248	1,129,354	7,783,000	368,327	45,350	20,946	191
Goodwill	64	44,488	93,042	409,540	33,802	1,971	0	0
Cash	81	97,237	340,811	2,369,000	28,138	8,025	3,207	2
Total Liab.	81	832,454	2,365,985	17,388,000	567,218	70,263	13,692	115
Current Liab.	81	435,336	1,319,262	10,153,000	389,351	32,996	9,196	115
Total Equity	81	678,210	1,720,343	10,370,000	398,166	90,174	27,402	517
Issued Capital	81	292,648	812,229	6,433,000	132,087	40,303	12,579	1,546
Pref. Capital	48	5,943	29,342	173,006	0	0	0	0
Operating CF	81	191,007	819,528	6,574,000	105,104	13,910	1,584	-6,373
Interest Pd.	74	33,487	82,963	549,000	15,223	3,600	424	0
Interest Rec.	80	7,591	28,583	232,000	2,421	620	169	0
Tax Paid	69	36,028	133,693	916,000	20,944	1,200	0	-2,310
Investing CF	81	-117,288	525,836	1,096,771	-3,016	-14,431	-60,338	-4,064,000
Financing CF	80	-38,692	307,476	385,800	14,384	336	-16,989	-2,484,000
Dividend Paid	69	58,137	220,288	1,802,000	39,965	8,029	622	0

Information on how to read this table is contained beneath Panel A.

Panel D: Control Group Two

Item	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
OPBT	81	63,681	155,083	1,135,000	59,394	8,886	-249	-37,400
OPAT (AE)	81	49,161	138,259	1,114,000	43,103	6,355	-249	-18,348
OPAT (BE)	81	49,211	138,270	1,114,000	43,103	6,355	-249	-18,348
Sales	78	963,780	2,053,339	12,175,000	603,329	118,513	27,530	0
Depreciation	79	29,419	55,858	262,800	23,386	5,912	363	0
Amortisation	74	12,503	34,937	205,600	8,023	1,145	180	0
Interest Exp.	77	25,428	77,237	595,000	8,249	1,817	340	0
Dividends	63	34,891	54,041	224,900	43,432	7,442	980	0
Preference Div.	44	843	5,425	36,000	0	0	0	0
Total Assets	81	1,364,885	3,753,403	29,721,000	774,301	166,973	45,895	1,390
Current Assets	81	421,522	968,692	5,391,000	162,460	48,073	12,068	203
Goodwill	57	61,439	131,772	468,500	30,300	2,854	0	0
Cash	81	90,419	280,780	1,212,000	36,219	8,833	1,085	0
Total Liab.	81	755,061	1,970,359	13,608,000	222,313	57,881	17,089	12
Current Liab.	81	355,240	821,546	3,794,000	108,674	28,076	5,484	12
Total Equity	81	608,968	1,887,638	16,113,000	445,250	89,738	24,242	-20,303
Issued Capital	81	181,435	322,417	1,776,000	172,884	32,453	13,640	3,047
Pref. Capital	45	12,692	84,663	568,000	0	0	0	0
Operating CF	81	98,350	221,011	1,123,000	61,326	10,481	944	-7,312
Interest Pd.	76	25,051	69,762	498,000	11,430	1,768	314	0
Interest Rec.	79	8,594	23,620	136,300	2,707	401	111	3
Tax Paid	62	14,335	23,688	79,100	18,400	3,391	66	-4,800
Investing CF	81	-90,801	211,738	46,413	-2,029	-13,016	-49,660	-1,181,100
Financing CF	81	-7,841	158,700	447,600	20,725	828	-3,475	-744,300
Dividend Paid	62	29,597	50,906	255,700	33,700	7,973	427	0

Information on how to read this table is contained beneath Panel A.

Table 5.2.3 – Short-Run BHARs of Sample and Control Firms over the Bid Period*Panel A: Acquiring Firm*

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
[-60, +10]	81	-1.183	21.004	77.056	5.467	-4.170	-12.767	-54.172
[-60, +2]	81	0.546	19.943	85.602	8.032	-1.274	-10.795	-55.067
[-60, +1]	81	0.566	18.771	85.385	7.874	-1.226	-11.417	-41.858
[-60, 0]	81	0.803	17.458	75.577	7.151	-1.212	-9.839	-41.954
[-10, +10]	81	-2.009	12.647	52.789	3.640	-1.647	-7.954	-48.377
[-1, +1]	81	-0.475	6.623	38.114	3.294	-0.799	-3.658	-18.495
[-1, 0]	81	-0.079	6.232	38.505	1.189	-0.591	-2.328	-14.206
Day 0	81	0.300	6.030	35.374	1.028	-0.215	-1.629	-14.035

Panel B: Target Firm

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
[-60, +10]	81	18.825	31.407	144.531	35.891	20.745	0.972	-51.679
[-60, +2]	81	19.259	28.040	114.941	35.514	20.146	-0.474	-37.689
[-60, +1]	81	18.468	26.168	114.926	33.691	20.288	0.753	-35.540
[-60, 0]	81	15.129	26.956	111.440	32.370	14.026	-3.060	-41.242
[-10, +10]	81	16.282	24.229	103.250	29.840	16.410	2.084	-59.268
[-1, +1]	81	13.122	13.278	49.950	19.970	12.005	2.494	-15.436
[-1, 0]	81	9.585	12.439	50.330	15.421	5.384	0.012	-8.091
Day 0	81	7.971	12.131	49.791	15.282	5.037	-0.125	-17.569

Panel C: Control Firm One

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
[-60, +10]	80	1.431	30.677	140.425	9.599	-3.014	-12.311	-50.052
[-60, +2]	81	2.060	26.836	101.069	10.735	-1.424	-11.016	-47.197
[-60, +1]	81	0.834	22.822	90.954	9.616	-1.568	-10.667	-44.148
[-60, 0]	81	0.294	22.321	69.593	9.123	-1.776	-9.928	-51.435
[-10, +10]	80	1.068	18.122	88.048	1.924	-2.271	-5.532	-59.005
[-1, +1]	81	0.898	6.435	32.967	2.091	-0.107	-1.944	-9.777
[-1, 0]	81	0.289	4.606	23.330	1.621	-0.373	-1.635	-11.228
Day 0	81	0.416	3.774	22.877	0.651	-0.228	-0.807	-9.422

Panel D: Control Firm Two

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
[-60, +10]	81	7.168	43.152	267.214	12.241	-3.075	-11.766	-41.013
[-60, +2]	81	7.517	42.367	286.954	13.835	-1.823	-10.954	-30.528
[-60, +1]	81	8.135	42.938	288.785	14.991	-0.982	-10.585	-30.505
[-60, 0]	81	8.830	43.576	273.929	14.571	-1.316	-9.838	-31.005
[-10, +10]	81	2.744	25.257	188.602	5.940	-1.444	-6.211	-32.665
[-1, +1]	81	-0.044	4.721	10.036	2.658	0.225	-2.527	-14.555
[-1, 0]	81	0.443	4.481	13.661	2.628	-0.052	-1.545	-14.531
Day 0	81	0.772	4.690	33.444	1.656	-0.123	-0.763	-7.648

This table reports the buy and hold abnormal returns (BHARs) of sample and control firms around the bid announcement date (Day 0). [-x, +y] represents days relative to the announcement date, i.e., the BHAR from x days before the announcement until y days after the announcement. BHARs are reported as a percentage.

Table 5.2.3 (presented on the previous page) provides descriptive statistics for the short-run sharemarket returns during the bid period. The performance of target and acquiring firms in this period is consistent with the majority of literature in this area, which finds strong positive performance for target firms and relatively small returns for acquiring firms (e.g., Jensen and Ruback, 1983; Jarrell, Brickley and Netter, 1988). Abnormal returns across all windows are positive in both mean and median for the target firms, whereas smaller abnormal returns, primarily negative, are experienced by acquiring and control firms. This implies a net gain for the combined shareholders of target and acquiring firms. If capital markets are informationally efficient, this gain should reflect expected improvements in performance in the post-merger period. The long-run returns of these firms are reported individually in the Appendix and are discussed in the next chapter.

This chapter has outlined the data collection process and issues which arose during this process, as well as providing a statistical description of the sample and control firms. The following chapter provides an analysis of the sample data, testing the hypotheses developed in chapter three.

CHAPTER SIX

RESULTS

This chapter presents the results of the study, providing analysis and interpretation of the yearly and cumulative ratios of the sample firms, as well as the Healy et al. (1992) type regressions. The first section will discuss the individual year abnormal accounting ratios, the second section will discuss the cumulative pre- and post-merger period ratios and the third section will discuss the results of the regressions.

6.1 Individual Year Abnormal Results

The sample firm accounting ratios for individual years adjusted against the ratios for control group one are reported in Table 6.1.1.⁴⁶ Results for control group two are reported in Table A6.1.1 which can be found in Appendix A. This section shall review the results for control group one, comparing them to the same ratios in control group two where necessary. In both this section and section 6.2 median values will be used to perform the analysis, consistent with prior research (e.g., Healy et al., 1992). This is principally because of the presence of a number of large outliers in some of the ratios. The presence of firms in the sample which have very low sales revenue, particularly mining exploration companies, makes ratios with sales as a denominator particularly susceptible to these outliers. Analysis of the medians is reported, with a brief discussion on the behaviour of the mean, where it is relevant.

6.1.1 Individual Year Accounting Performance Ratios

Panel A of the table reports $HPR_{CF}/Sales$. An indication of performance is given by the medians, which are fairly similar in the pre- and post-merger periods, with slightly better performance following the merger. Control group two reports similar results. In contrast, the means indicate a decline in post-merger performance. The $HPR_{CF}/Assets$

⁴⁶ Unless otherwise noted, all references to the table in this section refer to Table 6.1.1 and all references to the appendix refer to Table A6.1.1.

figures reported in Panel B show decreasing median values following a merger, for both control firms. The same general pattern is exhibited in the behaviour of the means.

The median performance OCF/Sales, reported in Panel B, indicates slight post-merger improvements using control group one and a small fall in performance using control group two. OCF/Assets does not change significantly from the pre to the post-merger period. Both of these ratios indicate that operating cash flows decrease in the year immediately prior to a merger. This reflects small decreases in target firm and small increases in control firm performance regarding this measure in the period prior to an acquisition.⁴⁷

Performance as measured by ROA is almost identical regardless of whether extraordinary items are included. Performance appears to deteriorate slightly following a merger, although it appears that the deterioration actually starts in year -1, perhaps indicating factors other than a merger influencing the results. The mean behaves in a similar fashion to this. ROE also seems to decrease following a merger, although the median results from control group one show an improvement in performance for year 1. Results for Profit Margin indicate marginal improvements, which are strongest in year 1. This is fairly consistent across measures which include and exclude extraordinary items. In sum, there do not appear to be any substantial and unambiguous changes in performance following a merger, however HPR_{CF} and PM improve slightly and ROA and ROE perform a little worse.

⁴⁷ See Tables A5.2.1 to A5.2.4 for details of this.

Table 6.1.1 – Sample Firm Individual Year Accounting Ratios Adjusted Against Control Group One*Panel A: HPR_{Cf}/Sales*

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	58	2.997	20.535	156.170	0.142	0.010	-0.074	-1.120
-2	70	1.243	7.969	64.241	0.168	0.041	-0.047	-3.949
-1	74	1.256	17.589	138.056	0.136	0.021	-0.084	-58.294
0	71	0.260	1.637	10.393	0.161	0.011	-0.061	-3.521
1	69	-0.012	1.728	6.150	0.158	0.045	-0.074	-11.182
2	60	1.105	5.584	38.814	0.100	0.033	-0.114	-1.661
3	58	-0.001	0.667	2.382	0.122	0.020	-0.143	-2.131

Panel B: HPR_{Cf}/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.052	0.420	2.576	0.091	0.004	-0.068	-0.687
-2	77	0.070	0.277	1.509	0.089	0.019	-0.033	-0.895
-1	80	0.063	0.367	2.745	0.092	0.011	-0.057	-0.481
0	81	-0.008	0.266	1.204	0.056	-0.010	-0.096	-1.418
1	77	0.015	0.227	1.336	0.077	0.011	-0.047	-0.743
2	69	0.026	0.415	2.226	0.062	0.009	-0.080	-0.923
3	66	-0.035	0.320	1.296	0.062	0.001	-0.156	-1.355

Panel C: Operating Cash Flows/Sales

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	58	2.836	19.458	147.831	0.132	0.006	-0.072	-0.340
-2	70	0.300	1.590	11.491	0.126	0.016	-0.043	-2.032
-1	74	-2.834	34.389	60.596	0.082	-0.011	-0.111	-287.846
0	71	0.310	2.501	18.661	0.097	0.007	-0.084	-5.512
1	69	0.173	2.037	13.478	0.124	0.031	-0.068	-7.963
2	60	1.287	8.391	64.488	0.140	0.020	-0.072	-0.660
3	58	0.055	1.148	4.433	0.124	0.020	-0.060	-5.697

Panel D: Operating Cash Flow/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.031	0.338	2.390	0.074	0.000	-0.080	-0.581
-2	77	0.023	0.155	0.534	0.109	0.010	-0.045	-0.454
-1	80	-0.002	0.250	1.247	0.062	-0.014	-0.097	-0.648
0	81	-0.019	0.183	0.747	0.040	-0.019	-0.096	-0.466
1	77	0.025	0.221	1.407	0.069	0.002	-0.052	-0.726
2	69	0.041	0.181	0.704	0.090	0.008	-0.043	-0.416
3	66	0.010	0.250	1.167	0.068	0.012	-0.062	-1.002

Panel E: Return On Assets (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.048	0.404	2.530	0.060	0.006	-0.047	-0.722
-2	77	0.058	0.246	1.406	0.048	0.007	-0.030	-0.569
-1	80	0.070	0.338	2.602	0.063	0.006	-0.039	-0.437
0	81	0.003	0.248	1.176	0.036	-0.003	-0.043	-1.357
1	77	-0.002	0.218	1.256	0.049	0.010	-0.046	-0.712
2	69	0.007	0.402	2.361	0.048	-0.003	-0.066	-0.997
3	66	-0.054	0.307	0.753	0.053	-0.009	-0.096	-1.402

Panel F: Return On Assets (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.046	0.405	2.530	0.060	0.008	-0.051	-0.722
-2	77	0.059	0.246	1.406	0.048	0.007	-0.029	-0.569
-1	80	0.069	0.338	2.602	0.059	0.001	-0.039	-0.437
0	81	0.002	0.248	1.174	0.036	-0.003	-0.056	-1.357
1	77	-0.005	0.216	1.256	0.049	0.010	-0.046	-0.712
2	69	0.004	0.403	2.361	0.048	-0.005	-0.066	-0.997
3	66	-0.054	0.307	0.753	0.053	-0.009	-0.096	-1.402

Panel G: Return On Equity (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.008	0.531	2.803	0.112	0.006	-0.100	-1.796
-2	77	0.093	0.318	1.164	0.133	0.006	-0.058	-0.613
-1	80	0.078	0.412	2.812	0.115	0.012	-0.063	-0.528
0	81	0.011	0.359	1.370	0.112	-0.005	-0.060	-1.659
1	77	-0.008	0.559	3.709	0.086	0.025	-0.098	-1.865
2	69	-0.296	1.388	1.308	0.091	-0.024	-0.212	-7.698
3	66	0.520	5.130	41.169	0.170	-0.029	-0.214	-2.101

Panel H: Return On Equity (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.004	0.533	2.803	0.112	0.001	-0.107	-1.810
-2	77	0.094	0.317	1.164	0.133	0.006	-0.056	-0.613
-1	80	0.071	0.399	2.812	0.112	0.010	-0.063	-0.528
0	81	0.008	0.358	1.363	0.112	-0.005	-0.090	-1.659
1	77	-0.012	0.560	3.709	0.083	0.025	-0.098	-1.865
2	69	-0.303	1.389	1.308	0.091	-0.035	-0.212	-7.698
3	66	0.520	5.130	41.169	0.170	-0.029	-0.214	-2.101

Panel I: Profit Margin (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	58	2.996	20.614	156.761	0.129	0.015	-0.064	-1.140
-2	70	1.241	7.944	64.127	0.086	0.003	-0.048	-2.356
-1	74	1.193	18.098	138.218	0.086	0.014	-0.041	-68.495
0	71	0.272	1.599	10.426	0.092	0.016	-0.051	-2.342
1	69	-0.031	1.731	6.561	0.075	0.022	-0.073	-11.377
2	60	1.085	5.840	40.582	0.066	0.019	-0.084	-1.682
3	58	-0.036	0.639	2.305	0.116	0.016	-0.140	-2.050

Panel J: Profit Margin (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	58	2.991	20.614	156.761	0.129	0.027	-0.067	-1.140
-2	70	1.244	7.944	64.127	0.086	0.005	-0.039	-2.356
-1	74	1.212	18.102	138.218	0.086	0.008	-0.041	-68.495
0	71	0.270	1.599	10.419	0.092	0.005	-0.041	-2.342
1	69	-0.075	1.702	6.561	0.075	0.018	-0.076	-11.377
2	60	1.081	5.841	40.582	0.066	0.017	-0.084	-1.682
3	58	-0.037	0.639	2.305	0.116	0.014	-0.140	-2.050

Panel K: Asset Turnover

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	58	-0.133	1.065	2.083	0.352	-0.027	-0.346	-4.878
-2	70	0.027	1.154	4.489	0.299	0.022	-0.305	-4.984
-1	74	-0.159	1.240	4.027	0.221	-0.053	-0.396	-5.692
0	71	-0.213	1.008	2.691	0.236	-0.124	-0.602	-3.951
1	69	-0.112	1.011	3.325	0.218	-0.033	-0.392	-2.976
2	60	-0.048	1.087	3.819	0.285	0.046	-0.356	-2.889
3	58	-0.182	1.015	3.553	0.197	-0.072	-0.446	-2.795

Panel L: Current Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-1.711	6.441	4.332	0.566	-0.057	-0.914	-34.273
-2	77	-0.911	8.828	26.743	0.594	0.011	-0.637	-65.553
-1	80	-0.222	12.451	63.481	0.767	0.033	-0.676	-69.264
0	81	-3.666	21.232	35.515	0.516	-0.148	-0.723	-136.214
1	77	-2.821	24.815	36.352	0.658	0.086	-0.723	-203.832
2	69	-4.478	43.273	104.808	0.809	0.040	-0.556	-322.817
3	66	-6.445	36.733	44.784	0.751	0.114	-0.795	-239.201

Panel M: Operating Cash Flow Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.692	3.373	23.116	0.412	-0.009	-0.270	-2.108
-2	77	0.939	5.377	37.090	0.448	0.055	-0.264	-5.109
-1	80	0.442	4.980	34.748	0.277	0.062	-0.354	-11.850
0	81	0.136	3.454	21.680	0.379	-0.001	-0.375	-17.785
1	77	0.081	4.045	18.640	0.425	0.107	-0.235	-23.191
2	69	-0.132	2.191	7.218	0.431	0.083	-0.179	-11.130
3	66	-0.435	2.677	2.395	0.392	-0.001	-0.254	-15.040

Panel N: Common Earnings Leverage (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.247	2.311	2.694	0.107	-0.002	-0.118	-17.846
-2	77	-0.119	1.055	1.699	0.064	-0.010	-0.103	-8.524
-1	80	-0.051	0.556	2.422	0.078	-0.003	-0.130	-3.037
0	81	0.089	1.055	8.140	0.119	-0.012	-0.122	-2.280
1	77	0.224	1.777	13.513	0.228	0.011	-0.102	-4.880
2	69	-0.307	2.763	3.583	0.116	-0.047	-0.178	-21.864
3	66	0.012	1.857	8.140	0.204	0.002	-0.192	-11.465

Panel O: Common Earnings Leverage (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.276	2.688	2.694	0.089	-0.005	-0.115	-20.890
-2	77	-0.139	1.038	1.566	0.054	-0.012	-0.121	-8.524
-1	80	-0.058	0.555	2.422	0.075	-0.011	-0.135	-3.037
0	81	0.081	1.057	8.140	0.119	-0.012	-0.147	-2.280
1	77	0.289	1.677	13.513	0.228	0.015	-0.083	-2.533
2	69	-0.312	2.762	3.583	0.111	-0.065	-0.178	-21.864
3	66	0.012	1.857	8.140	0.204	0.002	-0.192	-11.465

Panel P: Capital Structure Leverage

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.285	5.748	39.941	0.507	-0.047	-0.502	-16.880
-2	77	0.106	2.724	15.338	0.587	0.065	-0.326	-13.448
-1	80	0.223	1.670	11.273	0.485	0.004	-0.303	-3.774
0	81	0.252	1.143	4.667	0.627	0.123	-0.213	-2.622
1	77	0.266	1.697	8.743	0.830	0.066	-0.377	-5.694
2	69	0.355	1.762	8.476	0.856	0.135	-0.268	-6.201
3	66	-0.958	6.264	4.408	0.525	-0.055	-0.564	-48.759

Panel Q: Investing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.087	0.299	0.493	0.087	-0.026	-0.152	-1.011
-2	77	-0.009	0.244	1.112	0.092	-0.007	-0.092	-1.110
-1	80	-0.038	0.251	0.512	0.105	-0.012	-0.120	-0.929
0	81	-0.081	0.270	0.418	0.060	-0.063	-0.145	-1.003
1	77	0.028	0.224	0.790	0.137	0.019	-0.090	-0.570
2	69	-0.009	0.234	0.648	0.086	-0.004	-0.079	-0.778
3	66	0.011	0.229	0.439	0.125	0.038	-0.066	-1.362

Panel R: Financing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.040	0.438	1.043	0.049	-0.054	-0.121	-2.148
-2	77	0.043	0.311	1.568	0.141	0.032	-0.036	-0.943
-1	80	0.048	0.381	0.992	0.205	0.017	-0.073	-1.481
0	81	0.095	0.290	1.085	0.225	0.053	-0.044	-0.730
1	77	-0.030	0.261	0.558	0.082	0.005	-0.143	-0.982
2	69	-0.007	0.284	0.965	0.092	-0.015	-0.159	-1.080
3	66	-0.040	0.280	1.255	0.048	-0.033	-0.114	-0.871

This table reports ratios of accounting performance and other financial characteristics. Sample firm ratios in the pre-merger period are calculated using a combination of target and acquiring firm financial statement data, explained in section 4.1.1. The method of calculating these ratios is set out in Table 4.1.1. Adjusted ratios are calculated by taking the ratio of a sample firm and subtracting from it the corresponding ratio of its matched firm in control group one.

6.1.2 Other Accounting Ratios for Individual Years

This section examines seven accounting ratios presented in Panels K-R of Table 6.1.1, which measure characteristics of the firms other than operating performance. The first ratio is Asset Turnover, which does not appear to systematically change following a merger. The median value moves up and down from year to year, and the mean appears to decline, probably driven by outliers.

The current ratio appears to increase in the post-merger period, particularly in the second and third years. A similar result is evident in another measure of the ability to service short term debt, operating cash flows to current liabilities, reported in Panel M. The median operating cash flow ratio appears strongest in the first two years following a takeover, with weaker performance in the third year. These results may indicate an increased ability to service short term debt is a result of a takeover, although the movements in the ratio are not large enough to make any certain conclusions.

There does not appear to be a substantial change in Common Earnings Leverage (CEL), either before or after the inclusion of extraordinary items, with few movements in median measures. It does appear that CEL increases in the year 1 and falls in year 2, which may reflect the use of debt to finance the takeover transaction, however the changes are too small to draw any confident conclusions. Capital Structure Leverage (CSL, Panel P) appears to fall in year -1 and be strongest in years 1 and 2 before falling in the third year. Although it is again difficult to draw certain conclusions, this is consistent with the movements in CEL, indicating a lower reliance on common shareholder equity and a higher reliance on debt financing immediately following a merger.

Panel Q, which reports the level of investing cash flows to assets, does not indicate strong changes in the ratio immediately following a takeover. It does appear, however, that there is a significant lift in median investing cash flows to assets in the third year following a takeover. This may reflect a reduction or plateau in spending on investing activities immediately following the relatively large takeover transaction and a

subsequent large increase in these activities. One implication of this could be that operating performance may improve over a longer period than three years following a merger, after the targets and acquirers have finished restructuring and adjusting activities. The financing cash flows to assets ratio reported in Panel R confirms the results reported for CEL and CSL, with falls in both the median and the mean in year -1, following an increase in the ratio in year 0. This reflects an increase in either borrowings or the selling of shares during the year of takeover and increased interest or dividend costs immediately following the takeover.

6.2 Cumulative Period Abnormal Results

This section reports abnormal results for the cumulative periods, which aggregate accounting and share return values for one, two and three years. Table 6.2.1 reports accounting ratios for the periods, adjusted against control group one to produce abnormal ratios. Table A6.2.1, which reports the same abnormal ratios adjusted against control group two, can be found in the Appendix. The three sub-sections consider, in turn, accounting performance ratios, non-performance accounting ratios and long-run sharemarket returns. As in section 6.2, the presence of outliers leaves the median as the preferred method of measuring performance.

6.2.1 Cumulative Period Accounting Performance Ratios

There are seven accounting ratios which will be considered in this section, which are identical to those discussed in section 6.1.1. The first of these ratios is $HPR_{CF}/Sales$, reported in Panel A of Table 6.2.1. Using control group one the median suggests a very small decline in the two and three year periods and improvement in the one year period. The mean, heavily influenced by outliers appears to suggest the exact opposite. Results using control group two are similar, although movement in all cases is marginally positive using the median, and considerably negative using the mean. $HPR_{CF}/Assets$ declines in both median and mean in almost all periods and using both control groups,

however this decline is not substantial overall. This probably indicates that there is an insignificant decline in $HPR_{CF}/Assets$ following a merger.

The results using the different control groups for $OCF/Sales$ are contradictory, with control group one generally indicating improvements in the post-merger period and control group two indicating a fractional decline. As such, it is difficult to conclude the effect of a merger on this measure. The same phenomenon is experienced when total assets are used as a deflator of performance.

The value of ROA including extraordinary items does not differ substantially from ROA which excludes these items. For both measures, which are reported in Panels E and F, there appears to be little consistent change in the one and two year periods. In the three year period, there is a drop in the median following a merger for firms adjusted by both control groups. This could indicate a gap between the event and when the effects of the event are experienced, or it may be the result of an intervening event. Another influence may be survivorship bias, which is introduced as firms which do not exist for two or three years before and after the takeover are excluded.

Panels G and H in both tables present a consistent fall in ROE using both median and mean measures in all periods. The only exception to this is an increase in median ROE in the one year periods using control group one. There appears to be support for a small decrease in ROE following a merger transaction. Profit Margin, presented in Panels I and J, does not appear to systematically change following a merger as the medians remain fairly constant.

Table 6.2.1 – Sample Firm Cumulative Period Accounting Ratios Adjusted Against Control Group One*Panel A: HPR_{CF}/Sales*

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	47	-4.937	35.303	6.980	0.135	0.023	-0.035	-241.714
Pre-2	60	-1.620	20.492	46.113	0.128	0.032	-0.049	-150.783
Pre-1	70	1.376	18.082	138.056	0.136	0.021	-0.073	-58.294
Post-1	69	-0.012	1.728	6.150	0.158	0.045	-0.074	-11.182
Post-2	60	0.490	4.162	22.972	0.123	0.027	-0.113	-16.510
Post-3	48	-0.030	6.388	31.768	0.093	0.012	-0.082	-22.411

Panel B: HPR_{CF}/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.063	0.473	1.408	0.206	0.004	-0.172	-1.072
Pre-2	66	0.144	0.502	3.210	0.158	0.028	-0.073	-0.551
Pre-1	76	0.075	0.369	2.745	0.092	0.015	-0.057	-0.481
Post-1	76	0.017	0.229	1.336	0.077	0.017	-0.045	-0.743
Post-2	66	0.034	0.577	2.829	0.117	0.012	-0.126	-1.642
Post-3	51	-0.041	0.699	2.427	0.165	0.000	-0.280	-2.050

Panel C: Operating Cash Flows/Sales

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	47	-7.310	52.007	11.135	0.098	0.010	-0.044	-356.098
Pre-2	60	-4.149	35.822	16.911	0.083	0.019	-0.053	-276.280
Pre-1	70	-2.982	35.365	60.596	0.082	-0.003	-0.083	-287.846
Post-1	69	0.173	2.037	13.478	0.124	0.031	-0.068	-7.963
Post-2	60	0.425	3.466	22.903	0.123	0.025	-0.051	-11.432
Post-3	48	-0.182	3.352	8.962	0.110	0.004	-0.049	-15.436

Panel D: Operating Cash Flow/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.011	0.419	1.579	0.166	-0.068	-0.193	-0.979
Pre-2	66	0.041	0.332	1.364	0.131	-0.005	-0.109	-0.769
Pre-1	76	0.010	0.240	1.247	0.062	-0.010	-0.087	-0.605
Post-1	76	0.024	0.223	1.407	0.062	0.001	-0.053	-0.726
Post-2	66	0.045	0.314	1.303	0.122	0.003	-0.070	-0.982
Post-3	51	0.032	0.452	1.321	0.182	-0.028	-0.098	-1.619

Panel E: Return On Assets (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.063	0.408	1.428	0.072	-0.013	-0.093	-0.843
Pre-2	66	0.128	0.454	2.910	0.092	0.017	-0.046	-0.344
Pre-1	76	0.070	0.345	2.602	0.059	0.006	-0.039	-0.437
Post-1	76	0.008	0.203	1.256	0.054	0.010	-0.044	-0.563
Post-2	66	0.004	0.555	3.136	0.113	0.000	-0.132	-1.565
Post-3	51	-0.082	0.666	2.732	0.134	-0.052	-0.282	-2.121

Panel F: Return On Assets (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.062	0.404	1.428	0.072	-0.013	-0.077	-0.843
Pre-2	66	0.128	0.452	2.910	0.092	0.016	-0.046	-0.344
Pre-1	76	0.069	0.345	2.602	0.058	0.001	-0.039	-0.437
Post-1	76	0.004	0.202	1.256	0.049	0.010	-0.044	-0.563
Post-2	66	-0.004	0.555	3.136	0.087	0.000	-0.132	-1.565
Post-3	51	-0.084	0.666	2.732	0.119	-0.052	-0.282	-2.121

Panel G: Return On Equity (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.182	0.867	3.763	0.241	0.025	-0.185	-1.183
Pre-2	66	0.208	0.684	3.227	0.252	0.026	-0.120	-0.631
Pre-1	76	0.082	0.415	2.812	0.112	0.010	-0.063	-0.463
Post-1	76	0.016	0.520	3.709	0.092	0.025	-0.086	-0.851
Post-2	66	-0.335	1.487	1.962	0.130	-0.022	-0.347	-7.671
Post-3	51	-0.645	4.228	9.464	0.315	-0.151	-0.794	-27.565

Panel H: Return On Equity (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.165	0.787	2.713	0.241	0.025	-0.167	-1.183
Pre-2	66	0.200	0.659	3.227	0.252	0.026	-0.118	-0.631
Pre-1	76	0.074	0.403	2.812	0.106	0.008	-0.063	-0.463
Post-1	76	0.012	0.521	3.709	0.085	0.025	-0.086	-0.851
Post-2	66	-0.348	1.487	1.962	0.130	-0.022	-0.347	-7.671
Post-3	51	-0.648	4.228	9.464	0.315	-0.151	-0.794	-27.565

Panel I: Profit Margin (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	47	-5.310	37.746	7.055	0.067	0.008	-0.026	-258.484
Pre-2	60	-1.758	21.542	46.104	0.079	0.008	-0.037	-159.325
Pre-1	70	1.233	18.611	138.218	0.085	0.008	-0.041	-68.495
Post-1	69	-0.031	1.731	6.561	0.075	0.022	-0.073	-11.377
Post-2	60	0.466	4.225	22.993	0.066	0.005	-0.073	-16.814
Post-3	48	-0.299	7.383	31.875	0.058	-0.004	-0.069	-33.575

Panel J: Profit Margin (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	47	-5.308	37.746	7.055	0.067	0.007	-0.026	-258.484
Pre-2	60	-1.746	21.544	46.104	0.079	0.008	-0.037	-159.325
Pre-1	70	1.252	18.616	138.218	0.085	0.004	-0.041	-68.495
Post-1	69	-0.075	1.702	6.561	0.075	0.018	-0.076	-11.377
Post-2	60	0.438	4.222	22.993	0.066	0.005	-0.093	-16.814
Post-3	48	-0.302	7.383	31.875	0.058	-0.004	-0.083	-33.575

Panel K: Asset Turnover

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	47	-0.828	4.018	6.875	0.837	-0.263	-1.505	-19.032
Pre-2	60	-0.144	2.733	8.242	0.580	0.035	-0.714	-12.035
Pre-1	70	-0.185	1.254	4.027	0.200	-0.053	-0.396	-5.692
Post-1	69	-0.112	1.011	3.325	0.218	-0.033	-0.392	-2.976
Post-2	60	-0.231	2.130	6.332	0.623	0.016	-0.817	-5.747
Post-3	48	-0.542	3.087	8.120	0.979	-0.001	-1.462	-9.908

Panel L: Current Ratio

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	-0.339	6.191	23.662	0.636	0.130	-0.476	-32.914
Pre-2	66	-0.523	8.175	31.678	0.537	0.175	-0.683	-33.677
Pre-1	76	-0.079	12.705	63.481	0.811	0.033	-0.676	-69.264
Post-1	76	-2.839	24.980	36.352	0.661	0.098	-0.689	-203.832
Post-2	66	-1.998	13.512	26.339	0.694	0.185	-0.627	-75.233
Post-3	51	-2.648	12.564	9.908	0.683	0.182	-0.477	-77.765

Panel M: Operating Cash Flow Ratio

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.390	4.611	31.270	0.407	-0.085	-0.374	-5.833
Pre-2	66	0.793	5.838	39.528	0.379	0.020	-0.329	-5.815
Pre-1	76	0.528	5.078	34.748	0.277	0.069	-0.320	-11.850
Post-1	76	0.073	4.072	18.640	0.411	0.102	-0.235	-23.191
Post-2	66	-0.239	3.863	8.367	0.545	0.071	-0.227	-24.887
Post-3	51	-0.225	2.121	3.548	0.740	0.017	-0.233	-9.357

Panel N: Common Earnings Leverage (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	-0.054	0.513	1.564	0.117	-0.033	-0.143	-2.867
Pre-2	66	-0.047	0.443	1.586	0.035	-0.029	-0.150	-2.388
Pre-1	76	-0.085	0.489	1.101	0.072	-0.007	-0.130	-3.037
Post-1	76	0.227	1.789	13.513	0.229	0.005	-0.104	-4.880
Post-2	66	-1.422	21.584	87.689	0.195	-0.037	-0.151	-147.888
Post-3	51	-0.097	1.425	1.197	0.260	0.005	-0.178	-9.362

Panel O: Common Earnings Leverage (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	-0.031	0.405	1.564	0.103	-0.033	-0.153	-1.807
Pre-2	66	-0.055	0.480	1.586	0.035	-0.029	-0.150	-2.837
Pre-1	76	-0.091	0.488	1.101	0.069	-0.016	-0.135	-3.037
Post-1	76	0.292	1.687	13.513	0.229	0.022	-0.093	-2.533
Post-2	66	-1.425	21.584	87.689	0.195	-0.037	-0.151	-147.888
Post-3	51	-0.100	1.424	1.197	0.260	0.005	-0.178	-9.362

Panel P: Capital Structure Leverage

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	-0.062	1.189	2.941	0.314	-0.021	-0.460	-4.852
Pre-2	66	-0.214	1.915	2.771	0.336	0.030	-0.320	-12.127
Pre-1	76	0.197	1.703	11.273	0.470	-0.019	-0.303	-3.774
Post-1	76	0.344	1.561	8.743	0.872	0.068	-0.357	-4.201
Post-2	66	0.421	1.669	9.244	0.895	0.120	-0.472	-1.995
Post-3	51	0.546	4.481	29.346	0.901	-0.008	-0.751	-8.648

Panel Q: Investing Cash Flows/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	-0.087	0.338	0.659	0.122	-0.017	-0.219	-1.175
Pre-2	66	-0.039	0.332	0.934	0.160	-0.006	-0.169	-1.092
Pre-1	76	-0.045	0.255	0.512	0.094	-0.014	-0.140	-0.929
Post-1	76	0.036	0.215	0.790	0.141	0.020	-0.084	-0.493
Post-2	66	0.035	0.365	1.204	0.249	-0.013	-0.147	-0.949
Post-3	51	0.060	0.353	1.157	0.191	0.058	-0.114	-1.177

Panel R: Financing Cash Flows/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.034	0.582	1.412	0.283	-0.013	-0.150	-1.739
Pre-2	66	0.038	0.495	1.330	0.198	0.006	-0.103	-1.690
Pre-1	76	0.033	0.378	0.992	0.174	0.011	-0.077	-1.481
Post-1	76	-0.036	0.257	0.558	0.079	-0.000	-0.144	-0.982
Post-2	66	-0.045	0.475	0.722	0.162	0.029	-0.201	-1.965
Post-3	51	-0.096	0.562	1.243	0.121	-0.032	-0.283	-2.584

This table reports ratios of accounting performance and other financial characteristics, cumulated over periods of one, two and three years before and after the merger. Sample firm ratios in the pre-merger period are calculated using a combination of target and acquiring firm financial statement data and using a process which cumulates ratios over multiple periods, which are explained in sections 4.1.1 and 4.1.2. The method of calculating these ratios is set out in Table 4.1.1. Adjusted ratios are calculated by taking the ratio of a sample firm and subtracting from it the corresponding ratio of its matched firm in control group one.

6.2.2 Other Accounting Ratios for Cumulative Periods

This section examines cumulative abnormal ratios which measure the change in non-performance characteristics of the firm. The first measure is Asset Turnover, which declines in all periods when control group two is used, but improves in most periods using control group one. Consequently, it is difficult to determine whether firms use their assets more efficiently following a merger.

The median of the Current Ratio improves across all periods and control groups. The mean follows a similar pattern in control group two, and the opposite in control firm one. The same pattern is evident in the operating cash flow ratio, which indicates that the newly merged firm experiences improvements in liquidity resulting from the merger transaction.

Median and mean Common Earnings Leverage increases across almost all periods. There is a small drop in median CEL from two years before to two years after the merger in control group one. This is accompanied by a much larger drop in mean CEL, but again this measure is heavily skewed. The result is consistent regardless of whether extraordinary items are included. This indicates an increased portion of earnings being used to finance interest payments following a merger. The abnormal Capital Structure Leverage of the sample firms seems to confirm this, with increases in median and mean values in almost all periods. This indicates a decreased reliance on financing from common shareholders and an increased reliance on financing from debt and preference shareholders, consistent with an increase in debt payments.

There does not appear to be a consistent change in investing cash flows to assets in the one and two year periods, however both control firms report a large increase from the three year pre-merger to post-merger periods. As discussed in section 6.1.2, this may indicate a reduction or plateau in investing activity immediately following a merger, which is reversed later in the post-merger period. The medians and means for financing

cash flows to assets decline across all periods. This is consistent with the results for CEL and CSL, and is unsurprising given the extensive financing requirements of a takeover.

6.2.3 Long-Run Sharemarket Performance

Tables 6.2.2 and A6.2.2 present results for the long-run abnormal sharemarket returns of acquiring firms. These abnormal returns are adjusted by taking the long-run returns of the acquiring firms and subtracting the long-run returns of either control group one or control group two. There is an evident decline in long-run sharemarket performance in acquiring firms prior to this adjustment taking place, reported in Table A5.2.9. However, once the adjustment has been made, the two control groups produce different results. There is a strong decline when control group two is used, since the second group experiences stronger performance overall than control group one. When control group one is used, there still appears to be a decline in performance, however performance in year 3 is actually positive, and the differences are not as clear cut as those produced using control group two. The results using control group one indicate that there is a small negative impact on share returns immediately following a takeover, all of which is recovered by the third period. Mean values indicate that returns continue to decline, however these are again driven by outliers. Given that control group one is more accurately matched to the sample firms and has much more similar pre-performance⁴⁸ to the acquiring firms, the results of this group are likely to be more accurate. Interestingly, the return for the one year window is much lower than the returns over two or three years in the pre-merger period. This can be seen most clearly by looking at the unadjusted return to acquiring firms reported in Table A5.2.9. It is not immediately apparent why this might be the case. Returns for target companies in Table A5.2.9 indicate negative median returns for target firms, which could indicate that combined pre-merger share performance of target and acquiring firms could be weaker than acquirer performance, which would make post-merger changes more positive than those reported.

⁴⁸ This is evidenced, for instance, by a median abnormal return of 0.859 using control group one in the year preceding a merger, compared with a median of 8.380 when control group two is used.

Table 6.2.2 – Long-Run Sample Firm BHARs Adjusted Against Control Group One

Period	n.	Mean	Std. Dev.	Max.	75 th %	Median	25 th %	Min.
Pre-3	55	52.569	152.538	743.241	65.423	15.186	-21.482	-164.399
Pre-2	66	59.740	174.473	776.612	55.287	10.643	-30.355	-190.365
Pre-1	75	1.367	62.560	164.030	34.242	0.859	-24.951	-250.343
Post-1	78	0.465	53.011	294.641	16.746	-4.214	-28.317	-147.247
Post-2	70	-4.725	66.464	262.359	29.356	-6.679	-45.160	-259.575
Post-3	65	-13.108	111.058	354.038	43.201	1.057	-52.669	-428.153

This table reports the long-run buy and hold abnormal returns (BHARs) before and after a merger. The method of calculating BHARs is set out in section 4.1.3. Adjusted BHARs are calculated by taking the BHAR of a sample firm over a period and subtracting from it the BHAR over a corresponding period of its matched firm in control group one. The pre-merger windows are calculated from 6 months before event date, and the post-merger windows from 6 months after. Pre-1 represents the return from [-18, -6] months; Pre-2 from [-30, -6] months; and Pre-3 from [-42, -6] months. Likewise Post-1 is from [+6, +18] months; Post-2 from [+6, +30] months; and Post-3 from [+6, +42] months. BHARs are reported as a percentage.

6.3 Regression Results

This section discusses the results of the five regressions performed on the results for the one, two and three year periods preceding and following a merger. Each regression is discussed individually, analysing the different performance measures used, and considering the evidence for the one, two and three year periods collectively. In this section, Table 6.3.1 presents results for the one year period, Table 6.3.2 presents results for two year periods and Table 6.3.3 presents results for three year periods, all using control group one. Tables A6.3.1 to A6.3.3 report corresponding results which use control group two in the Appendix.

6.3.1 Changes in Post-Merger Performance

First, regression analysis was performed using equation (1) from section 4.3 in order to test H1, which states that the performance of merged firms will improve following a merger. Since $IAOP_{pre}$ should capture the correlation between pre-merger and post-merger performance, the intercept term will represent the improvements in long-run performance generated by the merger transaction itself. A positive intercept will indicate an improvement in performance and a negative intercept will indicate a decline in performance following a merger. The results for this regression are reported in Panel A

of Tables 6.3.1 to 6.3.3 and A6.3.1 to A6.3.3. In a number of cases the coefficient for $IAOP_{pre}$ was significant, either positively or negatively.

The tests for HPR_{CF} present fairly consistent results across all years and both sets of control firms. There are no statistically significant results for the intercept for $HPR_{CF}/Sales$, which are negative and insignificant for all years except the two year result for control firm one, which is positive and insignificant. The results for $HPR_{CF}/Assets$ are fairly similar, although the intercept for the three year period using control group two is negative and significant at the 10% level. Taken together these results indicate that HPR_{CF} does not significantly change following a merger.

The results for $OCF/Sales$ are similar, with insignificantly positive results reported for control group one and insignificantly negative results reported for control group two. Although these results are insignificant, differences between this measure and the measure used by HPR and following studies indicate the limitations of using an indirect measure of operating cash flows. $OCF/Assets$ presents an identical pattern of insignificant positive and negative results for control groups one and two respectively. From these results it appears that OCF is not affected substantially by a merger.

ROA is reported using measures which are calculated both before and after extraordinary items. Once more, none of the intercept estimations are statistically significant, with a mixture of marginally negative and marginally positive changes in post-merger performance. This is unaffected by the inclusion or exclusion of extraordinary items, and is indicative that ROA does not change substantially following a merger.

ROE is also reported before and after the inclusion of extraordinary items. In most cases, the change in ROE is insignificant and negative, or marginally positive. However, ROE is significant and negative at the 5% level using control firm one for two years before and after the merger. Once again, the application of extraordinary items does not appear to significantly impact the results. There is some evidence of a decline in ROE following a merger, however results remain insignificant in most cases.

Profit Margin is also reported before and after extraordinary items, and once more extraordinary items do not have a substantial impact on the results. No statistically significant results are reported for PM, and with the exception of the two year period using control group one, all intercept estimates are marginally negative. It appears that PM does not substantially change following a merger.

In most instances, the intercept for post-merger sharemarket performance of acquiring firms is negative, a result which attains significance at the 5% level in the three year period using control group two and at the 10% level for the two year period using that control group. However, given the more accurate matching between control group one and the acquiring firms, it is likely that these significantly negative results may be the result of noise introduced by differences between the sample and control firms. This evidence suggests that the long-run sharemarket performance of acquiring firms is not significantly positive or negative, once economy and industry-wide factors have been controlled for.

The weight of the evidence in this subsection indicates that accounting performance does not significantly change following a merger, regardless of the measure of performance used. Where there is significant evidence, it points towards a fall in post-merger performance in those measures. There is stronger evidence of negative post-merger share returns when control group two is used, however the results of control group one indicate that this finding may be subject to biases. Differences in sign between different measures and control groups indicate that the choice of performance measure has an impact on reported results.

6.3.2 Method of Payment

The regression results reported in this Panel B of the Tables are a test of H2, with the coefficient of CASH expected to be positive. This uses equation (2) from section 4.3. The coefficient of CASH for HPR_{CF} is almost uniformly positive, although with varying degrees of significance. Only one negative coefficient is reported, and is not statistically

significant. There is a positive coefficient for CASH in the two year period for $HPR_{CF}/Sales$ using control group one, which is significant at the 5% level. Other results are either insignificant or significant at the 10% level. The results for $HPR_{CF}/Assets$ provide more significant and positive results at the 5% level, for one and two year periods using control firm one and two years using control firm two. The results for the intercept are consistent with those reported in section 6.3.1. Hence, there appears to be some support for H2 using HPR_{CF} .

The coefficient for CASH is also positive in all cases using both $OCF/Assets$ and $OCF/Sales$. Using $OCF/Sales$ and control group one, this is significant at the 5% level for a one year period. Using $OCF/Assets$, this is significant at the 5% level for a two year period across both control firms and a three year period for control firm two. Again, there appears to be some support for the method of payment hypothesis using an OCF measure. Controlling for this factor does not have a substantial effect on the intercept, however the intercepts for years two and three in control group two increase in significance.

The CASH coefficient for ROA is again positive in all Tables, with or without extraordinaries. This is significant at either the 1% or 5% level in the two year periods and for control group one in the one year period. After controlling for this factor, the estimation of the intercept becomes significant and negative in a number of cases. There is good support for H2 using ROA as the performance measure, and some indication that changes resulting from a merger have a negative impact on ROA.

ROE also has a positive CASH coefficient in most cases, however these results are not particularly significant. The intercept in year one for control group one does become significant and negative, however other intercept values remain insignificant. The only negative coefficient for CASH is contained in the three year period for ROE (before and after extraordinaries) using control group two, although this is not significant. ROE provides some weak evidence both in favour of H2 and contrary to H1. Similarly, Profit Margin provides some weak support for H2, with 5% significance before extraordinaries

in a two year period, using control group one, and some support at the 10% level. Controlling for this factor does not have a significant impact on the intercept.

There is no strong evidence relating to the coefficient of CASH for BHAR. The coefficient is negative if control firm one is used and positive if control firm one is used, with none of the estimates being significant. The introduction of CASH does not have a significant impact on the value of the intercept and reduces the significance of the intercepts where some significance had previously been found. It appears that choice of method of payment does not have a significant impact on long-run sharemarket performance.

The introduction of the variable CASH into the regression equation has provided some support for H2 and some evidence contrary to H1. Using the accounting measures, in almost all instances the coefficient of CASH was positive, in some cases significantly so, evidence that performance is positively related to the choice of cash as a method of payment. In some instances, a previously insignificant intercept became significant at the 1% or 5% level. All of these intercepts were negative, providing some evidence that mergers have a negative effect on performance, once the effect of the method of payment is removed. In contrast, sharemarket performance did not appear to be significantly or consistently impacted by method of payment. This is consistent with the behaviour of an informationally efficient market, as it implies that the effects of method of payment on future operating performance are fully incorporated in short run returns at the time of announcement, rather than being discovered when performance actually improves and affecting long-run returns.

6.3.3 Industry Relatedness

Panel C of the Tables test H3, which predicts a positive coefficient of INDUSTRY. The coefficient of INDUSTRY is insignificant for all measures of performance. Regardless of the measure of performance used, this value is sometimes positive and sometimes negative. The estimate is more frequently negative than positive, and the absolute value

of negative terms is greater than the absolute value of positive terms, however it is difficult to interpret this, given the lack of significance. Introducing this term also has no impact on the significance of the intercept term. Similar results arise when analysing share performance. There is a negative coefficient in the three year period using control group one which is significant at the 10% level, but other coefficients are split between positive and negative values. One intercept value is increased in significance from 10% to 5%, but this is counteracted by a fall in significance from 5% in another instance. Using this equation, it appears that there is no evidence to support a relationship between improvement or decline in performance and the decision to undertake a takeover transaction within a similar industry.

6.3.4 Friendly Transactions

The results presented in Panel D of the Tables measure the relation between post-merger performance and the characterisation of a takeover transaction as friendly or hostile. Similar to the results presented in the previous sub-section, there are no statistically significant measures of the coefficient. In contrast to the results of the INDUSTRY coefficient, the majority of coefficient estimates are positive, particularly for the larger coefficient estimates. An exception to this is the sharemarket returns, which are mainly negative, particularly when control group two is used. Once more, the lack of statistical significance makes this result difficult to interpret. The addition of this variable does not generally have a significant effect on the intercept term. One exception to this is again the sharemarket performance, which experiences increases in significance to the 1% in two and three year periods using control group two, both of which are strongly negative. However, this is the likelihood of noise affecting this estimation when control group two is used, as discussed in section 6.3.1. These results indicate that the recommendation to accept or reject a takeover offer does not appear to have a significant impact on post-merger performance.

6.3.5 Combined Model

The final Panel on each of the Tables combines all of the hypotheses being examined in this study, simultaneously controlling for the impact of each of these factors. The results are fairly consistent with those reported in the previous sections, so only particularly significant estimates or changes introduced by using this model are discussed in this section. The intercept term across all accounting measures remains generally insignificant, with the exception of ROE in year two for control firm one, which is significant at the 5% level, and a few measures which are significant at the 10% level. The intercept of sharemarket measures when control group two is used is again significant in two and three year periods at the 1% and 5% levels respectively. However, the problem of bias being introduced by the firms in control group two again makes this result difficult to interpret. This may offer an explanation of why some previous studies have found negative abnormal returns in the post-merger period. If the control group is not accurately matched, an appearance of significantly negative post-merger performance may be introduced, whereas a more accurate match fails to produce evidence of superior or inferior post-merger performance.

The estimations for the coefficient for CASH are very similar to the estimations described in section 6.3.2, with only one exception to otherwise positive values in the accounting measures, and one exception to negative values in the sharemarket measures. In a number of cases the degree of significance changes when compared to the significance levels attained using only CASH and pre-performance. In the two year period $HPR_{CF}/Sales$, $OCF/Assets$ and PM before extraordinaries drop from 5% to 10% significance using control group one, whereas ROA increases to 1% period in the same period. In the three year period, using control firm two, $OCF/Assets$ drops from a significance level of 5% to 10%, whereas both measures of ROA move from 10% to 5% significance. After considering the changes which result from applying this expanded model, it appears that the findings confirm the evidence found in section 6.3.2, that there is some support for the hypothesis that takeovers where the method of payment is cash perform more strongly than takeovers where stock is offered.

The estimates of the coefficient for INDUSTRY are again consistent with those already reported. The majority of values are negative, but not significantly so. There is only one change in the level of significance, with ROA using control group two in the three year period increasing to a 10% level of significance whilst remaining negative. Given the marginal nature of this increase, this does not change the analysis offered in section 6.3.3, that there is no evidence to support H3. If anything, the evidence may suggest a marginally negative association between industry relatedness and post-merger performance.

The coefficient of FRIENDLY is insignificant across all Tables and measures of performance, confirming the results presented in section 6.3.4. The majority of values remain positive relating to accounting performance, but there is little that can be confidently concluded, given the lack of statistical significance and the presence of a substantial number of negative coefficients. Likewise, there is little change in the coefficient estimates relating to sharemarket performance. $HPR_{CF}/Sales$ and PM remain positive across all periods, perhaps indicating a marginal and insignificant improvement in these values in a friendly transaction relative to a hostile takeover. Again, it appears that whether a takeover transaction is friendly or hostile has little effect on the post-merger success of a firm.

Table 6.3.1 – Healy et al. (1992) Type Regressions for Sample Firms for One Year Pre- and Post-Merger Adjusted Against Control Group One

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel A: IAOP_{post} = α + βIAOP_{pre} + ε</i>									
HPR _{CF} /Sales	69	-0.0497 (-0.24)	0.017 (2.78)***	–	–	–	1.85	0.1787	0.0123
HPR _{CF} /Assets	76	-0.0021 (-0.08)	0.1844 (2.40)**	–	–	–	6.32	0.0143	0.0726
OCF/Sales	69	0.1179 (0.62)	4.7088 (1.82)*	–	–	–	26.27	<.0001	0.2709
OCF/Assets	76	0.0233 (0.89)	0.0071 (5.12)***	–	–	–	4.16	0.0452	0.0445
ROA (BE)	76	-0.0042 (-0.18)	0.1222 (1.80)*	–	–	–	2.86	0.0956	0.0266
ROA (AE)	76	-0.008 (-0.35)	0.12 (1.78)*	–	–	–	2.81	0.0985	0.0259
ROE (BE)	76	0.005 (0.09)	0.2175 (1.25)	–	–	–	2.03	0.1591	0.0149
ROE (AE)	76	0.0018 (0.03)	0.2238 (1.18)	–	–	–	2.00	0.1619	0.0145
PM (BE)	69	-0.0694 (-0.34)	0.0172 (2.78)***	–	–	–	1.89	0.1740	0.0129
PM (AE)	69	-0.1145 (-0.57)	0.0175 (2.84)***	–	–	–	2.03	0.1589	0.0149
BHAR	75	4.0331 (0.47)	0.2992 (1.33)	–	–	–	6.57	0.0142	0.117

Panel B: IAOP_{post} = α + βIAOP_{pre} + γCASH + ε

HPR _{CF} /Sales	69	-0.6241 (-1.36)	0.0143 (2.61)**	0.9101 (1.87)*	–	–	3.31	0.0426	0.0637
HPR _{CF} /Assets	76	-0.0792 (-1.96)*	0.1679 (2.29)**	0.1225 (2.45)**	–	–	5.82	0.0047	0.1242
OCF/Sales	69	-0.2563 (-0.91)	4.4321 (1.75)*	0.5919 (2.32)**	–	–	14.17	<.0001	0.2793
OCF/Assets	76	-0.0306 (-0.89)	0.0064 (4.84)***	0.0858 (1.72)*	–	–	3.37	0.0404	0.0652
ROA (BE)	76	-0.0814 (-2.21)**	0.1059 (1.65)	0.1226 (2.68)***	–	–	4.52	0.0144	0.0939
ROA (AE)	76	-0.0831 (-2.27)**	0.1058 (1.65)	0.1191 (2.61)**	–	–	4.37	0.0165	0.0901
ROE (BE)	76	-0.1171 (-1.99)**	0.1992 (1.18)	0.1934 (1.89)*	–	–	2.10	0.1309	0.0313
ROE (AE)	76	-0.1197 (-2.03)**	0.2092 (1.13)	0.1919 (1.85)*	–	–	2.07	0.1349	0.0304
PM (BE)	69	-0.6453 (-1.41)	0.0145 (2.62)***	0.9124 (1.88)*	–	–	3.34	0.0415	0.0644
PM (AE)	69	-0.6505 (-1.42)	0.0151 (2.70)***	0.8491 (1.76)*	–	–	3.15	0.0493	0.0595
BHAR	75	7.1524 (0.62)	0.304 (1.4)	-4.977 (-0.35)	–	–	3.25	0.0494	0.0966

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel C: IAOP_{post} = α + βIAOP_{pre} + δINDUSTRY + ε</i>									
HPR _{CF} /Sales	69	0.0193 (0.05)	0.0171 (2.80)***	–	-0.0824 (-0.18)	–	0.92	0.4035	-0.0024
HPR _{CF} /Assets	76	-0.0098 (-0.17)	0.1839 (2.41)**	–	0.0092 (0.14)	–	3.12	0.0506	0.0587
OCF/Sales	69	0.1007 (0.29)	4.7095 (1.82)*	–	0.0205 (0.05)	–	12.94	<.0001	0.2599
OCF/Assets	76	-0.0157 (-0.41)	0.0069 (4.97)***	–	0.0465 (0.96)	–	2.27	0.1111	0.0361
ROA (BE)	76	-0.0149 (-0.26)	0.1215 (1.82)*	–	0.0128 (0.21)	–	1.43	0.2477	0.0124
ROA (AE)	76	-0.0416 (-0.82)	0.1174 (1.78)*	–	0.0402 (0.71)	–	1.57	0.2166	0.0164
ROE (BE)	76	-0.0298 (-0.44)	0.217 (1.26)	–	0.0414 (0.42)	–	1.03	0.3636	0.0008
ROE (AE)	76	-0.0579 (-1.04)	0.2201 (1.18)	–	0.0712 (0.82)	–	1.07	0.3491	0.002
PM (BE)	69	-0.0472 (-0.13)	0.0172 (2.80)***	–	-0.0266 (-0.06)	–	0.93	0.3993	-0.002
PM (AE)	69	-0.3243 (-1.22)	0.0172 (2.81)***	–	0.2505 (0.71)	–	1.1	0.338	0.003
BHAR	75	-3.1556 (-0.12)	0.2986 (1.31)	–	8.5873 (0.32)	–	3.28	0.0481	0.0979

Panel D: IAOP_{post} = α + βIAOP_{pre} + λFRIENDLY + ε

HPR _{CF} /Sales	69	-0.0529 (-0.13)	0.0169 (2.66)***	–	–	0.0062 (0.01)	0.91	0.4077	-0.0027
HPR _{CF} /Assets	76	-0.0175 (-0.54)	0.184 (2.35)**	–	–	0.0294 (0.56)	3.27	0.0441	0.0627
OCF/Sales	69	0.1725 (0.5)	4.6926 (1.83)*	–	–	-0.1042 (-0.26)	12.98	<.0001	0.2606
OCF/Assets	76	0.0156 (0.55)	0.007 (4.67)***	–	–	0.015 (0.29)	2.09	0.1314	0.0312
ROA (BE)	76	-0.0209 (-0.77)	0.1205 (1.79)*	–	–	0.0323 (0.68)	1.62	0.2048	0.018
ROA (AE)	76	-0.0291 (-1.13)	0.1182 (1.76)*	–	–	0.0408 (0.87)	1.74	0.1842	0.0212
ROE (BE)	76	-0.0552 (-1.07)	0.2123 (1.23)	–	–	0.116 (0.98)	1.42	0.2491	0.0122
ROE (AE)	76	-0.0673 (-1.33)	0.2208 (1.16)	–	–	0.1329 (1.11)	1.54	0.2224	0.0156
PM (BE)	69	-0.0701 (-0.17)	0.0172 (2.65)***	–	–	0.0014 (0.00)	0.93	0.3997	-0.0021
PM (AE)	69	-0.1593 (-0.40)	0.0172 (2.64)***	–	–	0.087 (0.21)	1.02	0.3653	0.0007
BHAR	75	-0.8236 (-0.16)	0.3037 (1.35)	–	–	8.692 (0.54)	3.34	0.0455	0.1003

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel E: IAOP_{post} = α + βIAOP_{pre} + γCASH + δINDUSTRY + λFRIENDLY + ε</i>									
HPR _{CF} /Sales	69	-0.554 (-0.96)	0.0135 (2.17)**	1.0292 (1.63)	-0.3516 (-0.62)	0.29 (0.52)	1.8	0.1398	0.0449
HPR _{CF} /Assets	76	-0.0985 (-1.33)	0.1659 (2.17)**	0.1432 (2.40)**	-0.0335 (-0.50)	0.0659 (1.08)	3.25	0.0172	0.117
OCF/Sales	69	-0.1894 (-0.48)	4.4211 (1.74)*	0.6195 (2.01)**	-0.1265 (-0.27)	0.0421 (0.1)	6.89	0.0001	0.2573
OCF/Assets	76	-0.0702 (-1.14)	0.0061 (3.77)***	0.0923 (1.41)	0.0208 (0.41)	0.0349 (0.55)	1.79	0.1419	0.0444
ROA (BE)	76	-0.1049 (-1.52)	0.1009 (1.57)	0.1439 (2.74)***	-0.0306 (-0.49)	0.0689 (1.28)	2.74	0.0363	0.0927
ROA (AE)	76	-0.1308 (-1.94)*	0.1004 (1.56)	0.1379 (2.63)***	-0.0026 (-0.05)	0.0731 (1.35)	2.74	0.0361	0.0928
ROE (BE)	76	-0.2035 (-1.52)	0.187 (1.11)	0.2439 (1.90)*	-0.0447 (-0.45)	0.1774 (1.29)	1.49	0.2171	0.0278
ROE (AE)	76	-0.2367 (-1.82)*	0.2021 (1.07)	0.2415 (1.85)*	-0.016 (-0.18)	0.1902 (1.35)	1.55	0.1984	0.0314
PM (BE)	69	-0.612 (-1.06)	0.0137 (2.17)**	1.0209 (1.61)	-0.2919 (-0.53)	0.2773 (0.49)	1.78	0.1444	0.0437
PM (AE)	69	-0.8613 (-1.55)	0.0138 (2.18)**	0.9312 (1.48)	-0.0024 (-0.00)	0.3129 (0.55)	1.68	0.1652	0.0385
BHAR	75	-4.1215 (-0.16)	0.307 (1.39)	-4.7877 (-0.31)	8.6136 (0.32)	7.0596 (0.39)	1.63	0.1866	0.0566

This table presents the results of regressions performed on a Healy et al. regression equation, and an expansion of this equation. An explanation of the accounting ratios used in these regressions is set out in Table 4.1.1. Adjusted ratios are calculated by taking the ratio of a sample firm and subtracting from it the corresponding ratio of its matched firm in control group one. The method of calculating BHARs is set out in section 4.1.3. Adjusted BHARs are calculated by taking the BHAR of a sample firm over a period and subtracting from it the BHAR over a corresponding period of its matched firm in control group one, explained in Table 6.2.2. Panel A reports the results using the basic Healy et al. regression model, with IAOP_{pre} being the pre-performance of sample firms, and Panels B-E reports results investigating the effect that method of payment (CASH), industry relatedness (INDUSTRY) and whether the transaction is friendly or hostile (FRIENDLY) both individually and cumulatively. The input for BHAR is a percentage, accounting ratios are reported in raw form.

***, **, * Denote significance using a two tailed White's adjusted t-test at the 1%, 5% and 10% levels, respectively.

Table 6.3.2 – Healy et al. (1992) Type Regressions for Sample Firms for Two Years Pre- and Post-Merger Adjusted Against Control Group One

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel A: IAOP_{post} = α + βIAOP_{pre} + ε</i>									
HPR _{CF} /Sales	60	0.2924 (0.66)	-0.1219 (-3.50)***	–	–	–	32.67	<.0001	0.3493
HPR _{CF} /Assets	66	0.0097 (0.14)	0.4193 (3.36)***	–	–	–	10.22	0.0023	0.1351
OCF/Sales	60	0.063 (0.22)	6.8174 (2.02)**	–	–	–	35.89	<.0001	0.3716
OCF/Assets	66	0.0598 (1.56)	0.0006 (1.14)	–	–	–	0.32	0.5731	-0.0116
ROA (BE)	66	-0.005 (-0.07)	0.3445 (1.91)*	–	–	–	5.56	0.0218	0.0717
ROA (AE)	66	-0.0139 (-0.19)	0.3455 (1.88)*	–	–	–	5.51	0.0223	0.0711
ROE (BE)	66	-0.4003 (-2.26)**	0.295 (1.36)	–	–	–	1.08	0.3029	0.0014
ROE (AE)	66	-0.4142 (-2.35)**	0.3056 (1.3)	–	–	–	1.07	0.3046	0.0012
PM (BE)	60	0.2598 (0.57)	-0.1171 (-3.67)***	–	–	–	32.08	<.0001	0.345
PM (AE)	60	0.2338 (0.52)	-0.1172 (-3.67)***	–	–	–	32.28	<.0001	0.3465
BHAR	66	-7.7488 (-0.94)	0.1395 (1.38)	–	–	–	7.44	0.0094	0.1329

Panel B: IAOP_{post} = α + βIAOP_{pre} + γCASH + ε

HPR _{CF} /Sales	60	-0.8091 (-1.08)	-0.1301 (-3.86)***	1.7649 (2.11)**	–	–	19.16	<.0001	0.381
HPR _{CF} /Assets	66	-0.1728 (-2.49)**	0.4091 (3.72)***	0.2983 (2.63)**	–	–	8.15	0.0008	0.1951
OCF/Sales	60	-0.4469 (-0.78)	6.7133 (2.03)**	0.8357 (1.4)	–	–	18.70	<.0001	0.375
OCF/Assets	66	-0.0377 (-0.72)	0.0002 (0.48)	0.1557 (2.21)**	–	–	2.21	0.1195	0.0393
ROA (BE)	66	-0.1826 (-2.72)***	0.3308 (2.00)*	0.2907 (2.51)**	–	–	5.41	0.0071	0.13
ROA (AE)	66	-0.187 (-2.79)***	0.3356 (2.01)**	0.2826 (2.45)**	–	–	5.22	0.0083	0.1251
ROE (BE)	66	-0.5181 (-1.70)*	0.2888 (1.36)	0.1931 (0.48)	–	–	0.64	0.5290	-0.0122
ROE (AE)	66	-0.5249 (-1.73)*	0.3018 (1.31)	0.1807 (0.45)	–	–	0.63	0.5383	-0.0128
PM (BE)	60	-0.8259 (-1.09)	-0.1246 (-4.05)***	1.739 (2.04)**	–	–	18.64	<.0001	0.3742
PM (AE)	60	-0.825 (-1.09)	-0.1245 (-4.03)***	1.6963 (1.99)*	–	–	18.60	<.0001	0.3737
BHAR	66	-3.5352 (-0.32)	0.1453 (1.41)	-7.3067 (-0.47)	–	–	3.71	0.0333	0.1142

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel C: IAOP_{post} = α + βIAOP_{pre} + δINDUSTRY + ε</i>									
HPR _{CF} /Sales	60	-0.0538 (-0.20)	-0.1216 (-3.50)***	–	0.4246 (0.7)	–	16.17	<.0001	0.3395
HPR _{CF} /Assets	66	-0.0216 (-0.24)	0.4174 (3.31)***	–	0.0386 (0.32)	–	5.05	0.0096	0.1207
OCF/Sales	60	-0.1063 (-0.23)	6.8118 (2.02)**	–	0.2077 (0.35)	–	17.68	<.0001	0.3611
OCF/Assets	66	0.0334 (0.43)	0.0006 (1.16)	–	0.0325 (0.36)	–	0.21	0.8095	-0.0274
ROA (BE)	66	-0.0192 (-0.21)	0.3435 (1.88)*	–	0.0176 (0.14)	–	2.74	0.0733	0.0556
ROA (AE)	66	-0.062 (-0.67)	0.3415 (1.83)*	–	0.0594 (0.48)	–	2.77	0.0709	0.0567
ROE (BE)	66	-0.0956 (-0.82)	0.2972 (1.37)	–	-0.3737 (-1.45)	–	0.80	0.4539	-0.0068
ROE (AE)	66	-0.1549 (-1.20)	0.3128 (1.34)	–	-0.3192 (-1.23)	–	0.72	0.4896	-0.0095
PM (BE)	60	-0.0719 (-0.24)	-0.1168 (-3.67)***	–	0.4068 (0.65)	–	15.86	<.0001	0.335
PM (AE)	60	-0.2191 (-0.91)	-0.1168 (-3.67)***	–	0.5554 (0.92)	–	16.04	<.0001	0.3377
BHAR	66	-11.9276 (-0.52)	0.1406 (1.39)	–	4.907 (0.2)	–	3.65	0.0350	0.112

Panel D: IAOP_{post} = α + βIAOP_{pre} + λFRIENDLY + ε

HPR _{CF} /Sales	60	0.2668 (0.35)	-0.1221 (-3.53)***	–	–	0.0507 (0.06)	16.06	<.0001	0.3379
HPR _{CF} /Assets	66	0.0478 (0.41)	0.4199 (3.19)***	–	–	-0.0763 (-0.60)	5.22	0.0083	0.1252
OCF/Sales	60	0.2561 (0.46)	6.7946 (2.05)**	–	–	-0.3839 (-0.57)	17.87	<.0001	0.3638
OCF/Assets	66	0.0568 (1.05)	0.0006 1.15	–	–	0.0059 (0.08)	0.16	0.8519	-0.0293
ROA (BE)	66	0.0514 (0.4)	0.3437 (1.79)*	–	–	-0.1125 (-0.87)	3.13	0.0515	0.0672
ROA (AE)	66	0.0345 (0.27)	0.3446 (1.78)*	–	–	-0.0966 (-0.74)	3	0.0578	0.0635
ROE (BE)	66	-0.5055 (-1.77)*	0.2971 1.44	–	–	0.2097 (0.54)	0.67	0.5145	-0.0112
ROE (AE)	66	-0.535 (-1.88)*	0.3103 1.4	–	–	0.2397 (0.62)	0.71	0.495	-0.0099
PM (BE)	60	0.2768 (0.35)	-0.1169 (-3.68)***	–	–	-0.0336 (-0.04)	15.76	<.0001	0.3336
PM (AE)	60	0.2239 (0.29)	-0.1172 (-3.69)***	–	–	0.0195 (0.02)	15.86	<.0001	0.335
BHAR	66	-15.0555 (-1.54)	0.1389 (1.43)	–	–	13.1679 (0.78)	3.93	0.0277	0.1224

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel E: IAOP_{post} = α + βIAOP_{pre} + γCASH + δINDUSTRY + λFRIENDLY + ε</i>									
HPR _{CF} /Sales	60	-1.0555 (-1.26)	-0.1322 (-3.88)***	1.8619 (1.80)*	-0.0375 (-0.05)	0.4277 (0.43)	9.34	<.0001	0.3611
HPR _{CF} /Assets	66	-0.1462 (-1.40)	0.4101 (3.63)***	0.2957 (2.90)***	-0.0153 (-0.12)	-0.0254 (-0.20)	3.95	0.0069	0.1666
OCF/Sales	60	-0.3582 (-0.52)	6.7021 (2.05)**	0.7768 (1.14)	0.0999 (0.15)	-0.2666 (-0.35)	9.07	<.0001	0.3538
OCF/Assets	66	-0.0556 (-0.66)	0.0001 (0.23)	0.1649 (1.87)*	-0.0092 (-0.10)	0.0386 (0.45)	1.13	0.3523	0.0087
ROA (BE)	66	-0.1245 (-1.34)	0.3323 (1.91)*	0.2831 (2.98)***	-0.0273 (-0.22)	-0.0626 (-0.51)	2.69	0.0403	0.1029
ROA (AE)	66	-0.1658 (-1.71)*	0.3345 (1.90)*	0.2714 (2.83)***	0.015 (0.11)	-0.0529 (-0.42)	2.56	0.0483	0.0959
ROE (BE)	66	-0.3474 (-2.01)**	0.2911 (1.43)	0.3087 (0.86)	-0.4865 (-1.66)	0.3096 (0.89)	0.62	0.6498	-0.0264
ROE (AE)	66	-0.4092 (-2.24)**	0.3157 (1.48)	0.2931 (0.81)	-0.433 (-1.48)	0.332 (0.96)	0.59	0.6716	-0.0286
PM (BE)	60	-1.0171 (-1.19)	-0.1261 (-4.04)***	1.8141 (1.72)*	-0.0291 (-0.03)	0.332 (0.32)	9.05	<.0001	0.3529
PM (AE)	60	-1.1464 (-1.34)	-0.1259 (-4.03)***	1.7552 (1.66)	0.1276 (0.15)	0.3566 (0.35)	9.05	<.0001	0.3531
BHAR	66	-15.0018 (-0.62)	0.1443 (1.44)	-5.4223 (-0.31)	4.5757 (0.19)	11.6838 (0.67)	1.89	0.1323	0.0781

This table presents the results of regressions performed on a Healy et al. regression equation, and an expansion of this equation. Table 6.3.1 explains how this table is to be read.

***, **, * Denote significance using a two tailed White's adjusted t-test at the 1%, 5% and 10% levels, respectively.

Table 6.3.3 – Healy et al. (1992) Type Regressions for Sample Firms for Three Years Pre- and Post-Merger Adjusted Against Control Group One

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel A: IAOP_{post} = α + βIAOP_{pre} + ε</i>									
HPR _{CF} /Sales	47	-0.2026 (-0.46)	-0.1314 (-60.46)***	–	–	–	107.09	<.0001	0.6975
HPR _{CF} /Assets	51	0.0611 (0.76)	0.3542 (2.41)**	–	–	–	3.50	0.0678	0.0516
OCF/Sales	47	0.0509 (0.15)	3.0537 (1.92)*	–	–	–	12.78	0.0008	0.2039
OCF/Assets	51	0.0805 (1.56)	-0.0015 (-7.36)***	–	–	–	2.27	0.1390	0.0268
ROA (BE)	51	0.0272 (0.33)	0.1672 (0.98)	–	–	–	0.58	0.4508	-0.0092
ROA (AE)	51	0.0256 (0.31)	0.1605 (0.92)	–	–	–	0.52	0.4752	-0.0106
ROE (BE)	51	-0.7426 (-1.50)	-0.2837 (-0.44)	–	–	–	0.16	0.6903	-0.0186
ROE (AE)	51	-0.7337 (-1.52)	-0.393 (-0.49)	–	–	–	0.25	0.6194	-0.0166
PM (BE)	47	-0.2474 (-0.55)	-0.1235 (-60.61)***	–	–	–	104.50	<.0001	0.6923
PM (AE)	47	-0.2495 (-0.55)	-0.1236 (-60.62)***	–	–	–	104.52	<.0001	0.6924
BHAR	55	-13.5551 (-0.99)	-0.0043 (-0.04)	–	–	–	0.00	0.9639	-0.0243

Panel B: IAOP_{post} = α + βIAOP_{pre} + γCASH + ε

HPR _{CF} /Sales	47	-1.3021 (-1.12)	-0.1361 (-28.35)***	1.6868 (1.43)	–	–	58.06	<.0001	0.7127
HPR _{CF} /Assets	51	-0.0313 (-0.28)	0.3479 (2.44)**	0.1454 (0.98)	–	–	2.13	0.1308	0.0469
OCF/Sales	47	-0.3211 (-0.40)	2.9936 (2.00)*	0.5856 (0.77)	–	–	6.72	0.0028	0.1991
OCF/Assets	51	-0.0306 (-0.40)	-0.0018 (-7.56)***	0.1705 (1.70)*	–	–	2.42	0.1004	0.0582
ROA (BE)	51	-0.0757 (-0.88)	0.1531 (0.9)	0.1625 (1.17)	–	–	0.80	0.4569	-0.0089
ROA (AE)	51	-0.0794 (-0.92)	0.1489 (0.86)	0.1655 (1.2)	–	–	0.79	0.4612	-0.0093
ROE (BE)	51	-0.0518 (-0.27)	-0.2258 (-0.37)	-1.0985 (-1.28)	–	–	0.45	0.6400	-0.0245
ROE (AE)	51	-0.0439 (-0.21)	-0.3409 (-0.45)	-1.0939 (-1.26)	–	–	0.49	0.6135	-0.0225
PM (BE)	47	-1.3374 (-1.13)	-0.1278 (-27.92)***	1.6721 (1.39)	–	–	56.39	<.0001	0.7066
PM (AE)	47	-1.3421 (-1.14)	-0.1278 (-27.93)***	1.676 (1.39)	–	–	56.43	<.0001	0.7068
BHAR	55	-13.2288 (-1.07)	-0.0041 (-0.04)	-0.5385 (-0.02)	–	–	0.00	0.9989	-0.0499

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel C: IAOP_{post} = α + βIAOP_{pre} + δINDUSTRY + ε</i>									
HPR _{CF} /Sales	47	-0.1912 (-0.95)	-0.1314 (-51.61)***	–	-0.0141 (-0.02)	–	52.36	<.0001	0.6907
HPR _{CF} /Assets	51	-0.0331 (-0.26)	0.3555 (2.34)**	–	0.1164 (0.75)	–	1.89	0.1630	0.0373
OCF/Sales	47	-0.0894 (-0.30)	3.0504 (1.92)*	–	0.1736 (0.34)	–	6.28	0.0040	0.1866
OCF/Assets	51	0.0593 (-0.61)	-0.0015 (-6.67)***	–	0.0263 (0.23)	–	1.13	0.3323	0.0056
ROA (BE)	51	-0.047 (-0.37)	0.169 (0.99)	–	0.0917 (0.6)	–	0.39	0.6786	-0.0272
ROA (AE)	51	-0.0504 (-0.40)	0.161 (0.92)	–	0.094 (0.61)	–	0.37	0.6949	-0.0283
ROE (BE)	51	0.0267 (0.07)	-0.3386 (-0.49)	–	-0.9393 (-1.00)	–	0.26	0.7736	-0.0333
ROE (AE)	51	0.0123 (0.03)	-0.4338 (-0.52)	–	-0.9145 (-1.02)	–	0.29	0.7462	-0.0316
PM (BE)	47	-0.2268 (-1.02)	-0.1236 (-51.50)***	–	-0.0256 (-0.04)	–	51.09	<.0001	0.6853
PM (AE)	47	-0.2362 (-1.06)	-0.1236 (-51.51)***	–	-0.0166 (-0.03)	–	51.10	<.0001	0.6854
BHAR	55	18.1187 (1.2)	-0.0029 (-0.03)	–	-37.9442 (-1.71)*	–	0.40	0.6722	-0.0294

Panel D: IAOP_{post} = α + βIAOP_{pre} + λFRIENDLY + ε

HPR _{CF} /Sales	47	-0.3661 (-0.44)	-0.1321 (-36.14)***	–	–	0.3425 (0.4)	52.6	<.0001	0.6917
HPR _{CF} /Assets	51	0.1431 (0.99)	0.3053 (1.63)	–	–	-0.1683 (-1.00)	2.29	0.1136	0.053
OCF/Sales	47	-0.1099 (-0.15)	3.1558 (1.78)*	–	–	0.3369 (0.4)	6.41	0.0036	0.1903
OCF/Assets	51	0.1303 (1.51)	-0.0014 (-4.84)***	–	–	-0.1044 (-1.04)	1.63	0.2066	0.0269
ROA (BE)	51	0.1258 (0.82)	0.0965 (0.42)	–	–	-0.2018 (-1.17)	1.1	0.3416	0.0044
ROA (AE)	51	0.1258 (0.81)	0.0858 (0.36)	–	–	-0.205 (-1.18)	1.09	0.3441	0.004
ROE (BE)	51	-1.2403 (-1.27)	-0.2177 (-0.38)	–	–	1.0379 (1.01)	0.44	0.6496	-0.0252
ROE (AE)	51	-1.2221 (-1.29)	-0.2963 (-0.41)	–	–	1.0101 (1.03)	0.46	0.6355	-0.0241
PM (BE)	47	-0.3768 (-0.44)	-0.124 (-35.72)***	–	–	0.271 (0.31)	51.23	<.0001	0.6859
PM (AE)	47	-0.3772 (-0.44)	-0.124 (-35.73)***	–	–	0.2674 (0.31)	51.24	<.0001	0.686
BHAR	55	-3.8058 (-0.30)	0.0051 (0.05)	–	–	-18.5791 (-0.65)	0.17	0.8462	-0.0413

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel E: IAOP_{post} = α + βIAOP_{pre} + γCASH + δINDUSTRY + λFRIENDLY + ε</i>									
HPR _{CF} /Sales	47	-1.12 (-1.12)	-0.1387 (-16.23)***	1.9914 (1.27)	-0.8272 (-0.69)	0.5967 (0.6)	28.5	<.0001	0.7051
HPR _{CF} /Assets	51	0.0048 (0.03)	0.3037 (1.66)	0.1116 (0.77)	0.0783 (0.5)	-0.1601 (-0.96)	1.3	0.2859	0.0254
OCF/Sales	47	-0.4736 (-0.58)	3.1071 (1.84)*	0.6352 (0.63)	-0.0783 (-0.09)	0.3862 (0.42)	3.31	0.0191	0.1672
OCF/Assets	51	0.0398 (0.43)	-0.0017 (-3.83)***	0.17 (1.33)	-0.0376 (-0.26)	-0.0835 (-0.80)	1.36	0.2634	0.0305
ROA (BE)	51	-0.0014 (-0.01)	0.0892 (0.4)	0.1357 (1.11)	0.0449 (0.3)	-0.1919 (-1.15)	0.75	0.5621	-0.022
ROA (AE)	51	-0.0048 (-0.04)	0.0802 (0.35)	0.1373 (1.12)	0.0476 (0.31)	-0.1946 (-1.16)	0.76	0.5589	-0.0216
ROE (BE)	51	-0.1731 (-0.58)	-0.2125 (-0.36)	-0.8526 (-1.26)	-0.6109 (-0.79)	0.974 (0.99)	0.4	0.8092	-0.0553
ROE (AE)	51	-0.1656 (-0.55)	-0.2879 (-0.41)	-0.8595 (-1.23)	-0.5929 (-0.80)	0.9462 (1.01)	0.41	0.8022	-0.0543
PM (BE)	47	-1.1143 (-1.09)	-0.1301 (-15.95)***	1.9667 (1.23)	-0.8259 (-0.68)	0.5222 (0.51)	27.57	<.0001	0.6979
PM (AE)	47	-1.1223 (-1.10)	-0.1301 (-15.95)***	1.9676 (1.23)	-0.8171 (-0.67)	0.5184 (0.51)	27.58	<.0001	0.698
BHAR	55	23.8246 (0.83)	0.0045 (0.04)	0.9539 (0.03)	-35.8607 (-1.87)*	-15.2893 (-0.48)	0.25	0.9095	-0.0772

This table presents the results of regressions performed on a Healy et al. regression equation, and an expansion of this equation. Table 6.3.1 explains how this table is to be read.

***, **, * Denote significance using a two tailed White's adjusted t-test at the 1%, 5% and 10% levels, respectively.

6.4 Possible Sources of Bias

There are a number of factors which may be introducing bias into the results reported above. One of the issues was the presence of extreme outliers, which had a substantial impact on the mean of a number of ratios, particularly the ratios which used sales in the denominator. In order to control for this bias, rather than relying solely on the regression analysis to indicate improvements in post-merger performance, the results of a comparison between pre- and post-merger performance are also reported. The medians of each ratio for every individual year and period was analysed and contrasted to the behaviour of the means, with the median used as the preferred measure.

Another issue was the potential survivorship bias, arising from the relatively high attrition rate of merged firms following a takeover, as well as a new-listing bias which results from a relatively high number of target and acquiring firms listing less than three years before a takeover occurs. In order to control for this bias, analysis of the results was not limited to sample firms which exist for a full three years before and after a merger. By performing the regression tests on one, two and three year periods surrounding a takeover, it was possible to compare and contrast samples with differing survival characteristics and verify the consistency of results across these periods. The potential for this bias does limit the conclusions which can be drawn when analysing the ratio behaviour over time of these firms in section 6.1.

Importantly, the control group is another factor which may introduce bias in the results, particularly through firm specific economic events which do not affect the sample firms. This bias should not have a substantial impact on the results for a number of reasons. The first of these is that over a sample of 81, unusual firm specific events should have only a small net effect. This is because some firms will experience events which have a positive impact on performance and others will experience events with a negative impact. In addition, this study has controlled for these types of events by selecting two control firms for each sample firm, adjusting performance against each in turn. Whilst results for

both sets of control firms were generally quite similar, there were differences which highlight the importance of controlling for this factor.

6.5 Summary of Findings

This section will summarise the main results found in this chapter and discuss how this compares with previous research. First, in most cases no significant change was detected in operating performance following a merger. This is in contrast with a number of studies which find significant improvements in operating performance (e.g., Healy et al., 1992; Switzer, 1996), but confirms the findings of other studies within the literature (e.g., Ghosh, 2001). There are a number of possible explanations for these differences. First, a number of the studies which report significant improvements in operating profit use industry median as a control for factors external to the firm. Since Barber and Lyon (1996) find that this provides a weaker control for these factors than a matched pairs control design, bias introduced by the choice of control may be influencing the results of these studies. Another explanation is that the context in which this phenomenon is studied has an impact on the results. Using a similar research design, Ghosh (2001), in a United States context, and Powell and Stark (2004), in the United Kingdom, find contrasting results when investigating this issue. The finding of no significant change in operating performance is consistent with the only other study performed in an Australian context (Sharma and Ho, 2002). The choice of performance measure is another likely reason for differences with other studies. During the last decade, most studies on post-merger performance have used the approximation for operating cash flows advocated by HPR. The results of this study indicate that accrual measures, such as the HPR measure of cash flows, ROA and ROE, are more likely to produce statistically significant results than the direct measure of cash flows used in this study.

Another finding was that long-run sharemarket performance did not change significantly following a merger and remained unaffected by characteristics of the takeover transaction, consistent with the presence of an informationally efficient capital market. This is in contrast with much of the literature, which report negative CARs in the years

following a merger (e.g., Agrawal et al., 1992; Gregory, 1997). However, this is consistent with the findings of Brown and da Silva Rosa (1998), particularly their finding that the use of CARs rather than BHARs as a measure of long-run performance introduces a bias towards negative results.

The evidence presented in this chapter suggests that industry relatedness and a friendly takeover transaction are not related to changes in post-merger performance. This is generally consistent with previous findings in the literature, which indicate that industry relatedness (e.g., Linn and Switzer, 2001; Ghosh, 2001)⁴⁹ and a friendly takeover transaction (e.g., Ramaswamy and Waegelein, 2003) are not significant determinants of post-merger performance. There is strong support for the hypothesis that the choice of cash as the method of payment in a takeover is positively associated with changes in post-merger performance. This is consistent with other studies (e.g., Linn and Switzer, 2001; Ghosh, 2001), but differs to Ramaswamy and Waegelein (2003), who do not find an association between method of payment and changes in post-merger performance. However, the use of an industry median control by Ramaswamy and Waegelein, rather than a matched firms control may be introducing bias into their results. This finding is also consistent with studies which find evidence of earnings management by acquiring firms in the period preceding a takeover bid by acquirers who pay by stock (e.g., Erickson and Wang, 1999; Louis, 2004).

This chapter has analysed the results of this study, looking at how accounting and sharemarket performance has changed over time relative to the year of acquisition, and performing tests to detect merger-related changes in performance and the relationship between takeover characteristics and post-merger performance. The next chapter will offer some conclusions and suggestions for further research in this area.

⁴⁹ Although Ghosh (2001) finds evidence of a significantly negative association between industry relatedness and operating performance when using the market value of assets as a deflator, the result is discounted due to inherent biases introduced by using this measure, identified by Ghosh. This is particularly so as Ghosh's preferred method of deflation, Sales Revenue, yields insignificant results.

CHAPTER SEVEN

CONCLUSIONS

7.1 Conclusions

This thesis has examined the post-merger performance of 81 takeovers on the Australian Stock Exchange between January 1995 and December 1999, with the aim of determining whether the performance of these firms has improved as a result of gains arising from a merger. In order to meet this aim, seven ratios measuring accounting performance and one measure of sharemarket performance were analysed, including the first measure of direct operating cash flows ever used in a study of this issue. This section will outline a number of conclusions which may be drawn on the basis of this study.

First, the study found little evidence of a change in the long-run accounting performance of firms following a merger. Where evidence of significant changes could be detected, the changes were negative and were primarily restricted to ROA and ROE measures of performance. Given the lack of statistical power wielded by other measures, it is difficult to assess the impact of a takeover on them. This thesis concludes that there is no evidence to support H1, and if there is any change in the post-merger accounting performance of Australian takeovers, it is slightly negative. This study also confirms previous findings of positive short run returns from target firms and insignificant short run returns from bidding firms. The insignificant return to acquiring firms is consistent with the general lack of change in accounting performance in the post-merger period.

The findings relating to long-run postmerger sharemarket performance were contingent on the control group used. Control group one, which had characteristics most similar to the sample firm, produced insignificant changes in post-merger performance, whereas control group two provided evidence of a significant decline in share returns. Two conclusions can be drawn from this. First, it is likely that the results obtained using control group one are the most accurate, given the closeness in matching. This implies that the long-run abnormal returns experienced by acquiring firm shareholders are

insignificant, consistent with findings of insignificant acquirer shareholder gains in the bid period. Second, it emphasises the importance of matching control firms as closely as possible.

Tests performed in relation to H3 and H4 also produced statistically insignificant results. This implies that industry relatedness between target and acquiring firms and a friendly takeover transaction does not have a significant impact on the post-merger performance of a firm. The model which combined CASH with pre-merger performance appeared to be the best specified, indicated by relatively high R^2 and F-statistic values. As such, it appears that controlling only for method of payment is the most accurate model to detect changes in post-merger performance at this stage.

In contrast, tests performed in relation to H2 produced statistically significant and positive results, producing results significant to at least 10% and in most cases 5% in at least one period across all accounting measures of performance. This provides strong evidence to conclude that takeover offers which pay using cash are more likely to succeed than takeover offers which pay by shares or a mixture of shares and cash. The coefficient for CASH was insignificant for sharemarket returns, however, as were the coefficients for INDUSTRY and FRIENDLY. This may indicate that the market anticipates the effects of transaction characteristics on performance and fully incorporates this information into the short-run returns around the bid.

This thesis also confirms the importance of good research design in studies of long-run post-merger performance. By utilising a number of different measures of accounting performance and using two different control groups to adjust performance, the differences introduced by choice of measure and control become apparent. The differences in results between the two control firms, particularly in regard to long-run sharemarket returns highlight the importance of matching a set of control firms as closely as possible to the set of sample firms. The measure of cash flow used, the decision to include or exclude extraordinary items and the choice of deflator all had differing effects on the reported results, sometimes significantly so.

7.2 Suggestions for Future Research

The existence and source of change in post-merger performance remains an intrinsically interesting issue and one which is difficult to provide certain answers to. As such, research in this issue must continue and research design must continue to improve if a clearer picture of the effects of a takeover transaction is to emerge in the literature. Of particular importance is a better understanding of the effect takeovers actually have on the long-run performance of merged firms and the relation between this performance and bid period returns. Whilst this thesis has provided evidence of insignificant or slightly negative post-merger performance, much can be gained by studying this phenomenon in greater depth.

One way this can be done is to look at post-merger performance over a longer time frame. There were some indications in this study that some firm characteristics or performance measures experienced change at different times following a merger. In some cases there was an immediate change which was later reversed and in others a significant change appeared between the second and third years. Studying this over five to seven years post-merger could indicate which changes are temporary and which have lasting effects on the combined firm. A significant problem which would have to be addressed in this type of study would be the high attrition rate of merged firms, as would an increased potential for additional factors to influence post-merger performance. It may also be useful to perform a longitudinal study, comparing how and why long-run post-merger performance changes vary across time.⁵⁰

Another opportunity for further research is the performance of target companies following an unsuccessful takeover offer. Studies of the bid period share returns of target companies indicate that targets of unsuccessful bids experience significant gains around the bid which are not reversed once the bid fails or is withdrawn (e.g., Walter, 1984; Bishop et al., 1987). Relating this finding to the subsequent accounting and sharemarket

⁵⁰ Switzer (1996) has already performed a study of this nature, however there are opportunities to study this in a different context (e.g., Australia) and using improvements in research design (e.g., a matched firms control).

performance of these firms would be an important contribution to the literature. It would also be interesting to investigate the relationship between post-merger performance and the decision to retain or remove target management.

Incorporating new ways to control for outside factors is another opportunity for further research in this area. On a few occasions in this study, abnormal performance measures adjusted against control group one were quite different to those adjusted by control group two, either in sign or magnitude. In order to control for this, future studies could incorporate additional sets of control groups or possibly generate a small portfolio of control firms matched on the same basis as the individual firms. Given the difficulty in finding suitable control firms for some sample firms in this study, this may be difficult to achieve in Australia. As some outliers were introduced due to the very low sales of some mining firms, partitioning a sample between mining and industrial firms or even different industries may be an option for researchers in the future. This may also be of interest to see if firms in different acquiring industries have a different post-merger response to a takeover. In addition, controlling for occasions in which an acquiring firm divests the target is another desirable addition to the research design of future studies.

Studies of the long-run sharemarket return of combined firms could incorporate some method of combining the pre-merger performance of acquiring and target firms, particularly given indications of the strong pre-merger performance of acquiring firms and weak pre-merger performance of target firms contained in this thesis. This would also allow greater comparability between sharemarket returns and accounting returns. It would also be interesting to combine the bid period share returns of the target and acquiring firms, in order to estimate the overall impact of the announcement on the combined firm during this period. Developing a way of combining these returns without biasing results would be difficult, however the potential benefits to knowledge in this area make it worthwhile.

In addition to these suggestions for future empirical research in the area, there is also the opportunity to advance the theoretical research on takeovers. Developing a model to

explain the post-merger performance of takeovers could increase understanding of how any changes in performance could arise. Such a model should also yield testable predictions for empirical researchers to incorporate into their studies, as well as identifying those factors which should impact the success or failure of a merger after the event.

7.3 Implications

A number of interested parties to the findings of this thesis were identified in chapter one, including shareholders and managers of both target and acquirer firms, government and regulatory bodies, and researchers in finance and accounting. This concluding section will outline the implications of the findings of this thesis to each of these parties.

Target shareholders appear to benefit from the takeover transaction, evidenced by large positive abnormal returns generated to these shareholders during the bid period. The findings that accounting and sharemarket returns to the merged firm do not change significantly following a merger and that acquiring firms generate relatively small returns in the bid period imply that the premium offered to these shareholders is fair. The finding that post-merger share returns remain unaffected by method of payment implies that target shareholders are not significantly impacted by the choice to offer cash or stock, as the anticipation of weaker accounting performance resulting from a non-cash offer is anticipated by the market during the bid period. However, since post-merger returns are measured from six months after the takeover, this may depend on how quickly the market incorporates anticipated performance. In addition, the finding that target firm performance is generally declining prior to a merger makes acceptance of a takeover offer more desirable, to both shareholders and management. The negative association between post-merger performance and a non-cash offer should influence target management to strongly consider recommending the rejection of bids which offer stock as payment.⁵¹

⁵¹ This is not inconsistent with the discussion earlier in the paragraph that even a stock based bid would benefit target shareholders, assuming that the negative post-merger accounting effects were incorporated into share price prior to target shareholders deciding to accept or reject the offer. Whilst acceptance of a stock based bid will still benefit target shareholders, it may not be the best decision for the target firm itself.

The findings of this thesis also indicate that bidder shareholders are not significantly impacted by a merger transaction, using either an accounting or share performance measure. However, there is evidence that acquisitions using cash as a method of payment perform more strongly in the post-merger period. This implies that bidder shareholders should be concerned if their firm makes a takeover offer using shares as the method of payment. Although this study has not examined the determinants of bid period performance, under an efficient market weaker post-merger performance will have a negative impact on the share price of the acquiring firm. Since this impact is not felt in the long-run, it is likely to impact on acquiring shareholders around the time of the bid.

The results of this study will also be of interest to the management of bidding firms. A finding that a merged firm does not experience significant changes in performance may encourage takeover activity. Since acquiring firms do not suffer strongly negative changes in operating performance following a merger, if these firms have reasons to engage in a takeover other than improvements in operating performance⁵², the performance consequences are unlikely to counteract these reasons. Additionally, results which indicate that the choice of cash as the method of payment is positively related to accounting performance imply that cash ought to be the preferred payment method for bidder management. This is particularly so because long-run returns are not associated with the method of payment. Since this implies that the impact on accounting performance is incorporated in the bid period share returns, using stock as a method of payment in order to delay poor shareholder performance is unlikely to be a successful tactic. The evidence also implies that the industry relatedness of the target firm and the level of target management resistance should not be areas of great concern to bidder management, since they are not associated with post-merger performance.

For government and regulatory bodies, the evidence presented in this thesis suggests two things. First, takeovers as a whole should neither be encouraged nor discouraged, as

⁵² For instance, results in chapter six indicate that the current ratio and operating cash flow ratio improve subsequent to a merger. This indicates that improved liquidity could be a motivation to merge.

changes in post-merger performance are negligible. Second, strong support for the superior performance of cash financed acquisitions means that regulation to encourage cash as a method of payment rather than stock is highly desirable. As suggested in chapter one, this could be achieved through appropriate design of the taxation system in Australia.

Finally, the findings of this thesis are significant to accounting and finance researchers. The results demonstrate that the sharemarket in Australia operates in an efficient manner. This is implied because the economic effects of takeover transaction characteristics are incorporated at the time of the transaction rather than the post-merger period, and acquiring firm share returns during the bid period are consistent with post-merger accounting performance. Given the importance of market efficiency in capital markets research, this is a significant contribution to knowledge in this area. In addition, this thesis resolves some of the tensions prevalent in the literature regarding post-merger performance. The use of multiple accounting performance measures shows that whilst different measures change in a broadly similar fashion, there are differences between the measures, indicative of sensitivity to research design. The results of the first ever measure of direct operating cash flows used in a study of this type are also significant to researchers, particularly given that almost all studies since Healy et al. (1992) have attempted to approximate this measure. By combining long and short-run sharemarket performance and accounting performance into one study, this thesis also adds to the understanding of how each of these relate to the others. In sum, the results of this thesis have far reaching and significant implications for capital market researchers, target and bidder management and shareholders, and government and regulatory bodies.

BIBLIOGRAPHY

- Agrawal, A., J. F. Jaffe and G. N. Mandelker (1992) "The Post-Merger Performance of Acquiring Firms: A Re-examination of an Anomaly", *The Journal of Finance*, 47, 1605-1622.
- Andrade, G. and E. Stafford (2004) "Investigating the economic role of mergers", *Journal of Corporate Finance*, 10, 1-36.
- Barber, B. M. and J. D. Lyon (1996) "Detecting abnormal operating performance: the empirical power and specification of test statistics", *Journal of Financial Economics*, 41, 359-399.
- Bishop, S., P. Dodd and R. Officer (1987) *Australian Takeovers: The Evidence 1972-1985*, Centre for Independent Studies, Sydney.
- Brown, P. and R. da Silva Rosa (1998) "Research Method and the Long-Run Performance of Acquiring Firms", *Australian Journal of Management*, 23, 23-38.
- Brown, S., M. Finn and O. K. Hope (2000) "Acquisition-Related Provision-Taking and Post-Acquisition Performance in the UK Prior to FRS 7", *Journal of Business Finance & Accounting*, 27, 1233-1265.
- Bugeja, M. and T. Walter (1995) "An Empirical Analysis of Some Determinants of the Target Shareholder Premium in Takeovers", *Accounting and Finance*, 35, 33-60.
- Campa, J. M. and I. Hernando (2004) "Shareholder Value Creation in European M&As", *European Financial Management*, 10, 47-81.
- Chatterjee, R. and G. Meeks (1996) "The Financial Effects of Takeover: Accounting Rates of Return and Accounting Regulation", *Journal of Business Finance & Accounting*, 23, 851-868.
- Clark, K. and E. Ofek (1994) "Mergers as a Means of Restructuring Distressed Firms. An Empirical Investigation." *Journal of Financial and Quantitative Analysis*, 29, 541-565.
- da Silva Rosa, R., H. Y. Izan, A. Steinbeck and T. Walter (2000) "The Method of Payment Decision in Australian Takeovers: An Investigation of Causes and Effects", *Australian Journal of Management*, 25, 67-94.
- Desai, H. and P. C. Jain (1999) "Firm performance and focus: long-run stock market performance following spinoffs", *Journal of Financial Economics*, 54, 75-101.

- Edey, P. H. and S. L. Taylor (1999) "Directors' Recommendations on Takeover Bids and the Management of Earnings: Evidence from Australian Takeovers", *Abacus*, 35, 29-45.
- Erickson, M. and S. W. Wang (1999) "Earnings management by acquiring firms in stock for stock mergers", *Journal of Financial Economics*, 27, 149-176.
- Fee, C. E. and S. Thomas (2004) "Sources of gains in horizontal mergers: evidence from customer, supplier, and rival firms", *Journal of Financial Economics*, In Press, Corrected Proof,
- Ghosh, A. and C. W. J. Lee (2000) "Abnormal Returns and Expected Managerial Performance of Target Firms", *Financial Management*, 29, 40-52.
- Ghosh, A. and P. C. Jain (2000) "Financial leverage changes associated with corporate mergers", *Journal of Corporate Finance*, 6, 377-402.
- Ghosh, A. (2001) "Does operating performance really improve following corporate acquisitions?" *Journal of Corporate Finance*, 7, 151-178.
- Gregory, A. (1997) "An Examination of the Long Run Performance of UK Acquiring Firms", *Journal of Business Finance & Accounting*, 24, 971-1002.
- Gregory, A. (2000) "Discussion of Acquisition-Related Provision-Taking and Post-Acquisition Performance in the UK Prior to FRS7", *Journal of Business Finance & Accounting*, 27, 1267-1272.
- Gugler, K., D. C. Mueller, B. B. Yurtoglu and C. Zulehner (2003) "The effects of mergers: an international comparison", *International Journal of Industrial Organization*, 21, 625-653.
- Healy, P. M., K. G. Palepu and R. S. Ruback (1992) "Does corporate performance improve after mergers?" *Journal of Financial Economics*, 31, 135-175.
- Hendershott, R. J. (1996) "Which Takeover Targets Overinvest?" *Journal of Financial and Quantitative Analysis*, 31, 563-580.
- Heron, R. and E. Lie (2002) "Operating performance and the method of payment in takeovers", *Journal of Financial and Quantitative Analysis*, 37, 137-155.
- Jarrell, G., J. Brickley and J. Netter (1988) "The Market for Corporate Control: The Empirical Evidence Since 1980", *Journal of Economic Perspectives*, 2, 49-68.
- Jarrell, G. and A. Poulsen (1987) "Bidder Returns", Working Paper.

- Jensen, M. and R. S. Ruback (1983) "The Market for Corporate Control: The Scientific Evidence", *Journal of Financial Economics*, 11, 5-50.
- Jensen, M. (1986) "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers", *American Economic Review*, 76, 323-329.
- Jensen, M. (1988) "Takeovers: Their Causes and Consequences", *Journal of Economic Perspectives*, 2, 21-48.
- Krishnan, H. A. and D. Park (2002) "The impact of work force reduction on subsequent performance in major mergers and acquisitions - An explanatory study", *Journal of Business Research*, 55, 285-292.
- Linn, S. C. and J. A. Switzer (2001) "Are cash acquisitions associated with better postcombination operating performance than stock acquisitions?" *Journal of Banking & Finance*, 25, 1113-1138.
- Loughran, T. and A. M. Vijh (1997) "Do long-term shareholders benefit from corporate acquisitions?" *Journal of Finance*, 52, 1765-1790.
- Louis, H. (2004) "Earnings management and the market performance of acquiring firms", *Journal of Financial Economics*, 74, 121-148.
- Manson, S., R. Powell, A. W. Stark and H. M. Thomas (2000) "Identifying the Sources of Gains From Takeovers." *Accounting Forum*, 24, 319.
- Martin, J. D. and S. Akin (2003) "Corporate diversification and shareholder value: a survey of recent literature", *Journal of Corporate Finance*, 9, 37-57.
- Megginson, W. L., A. Morgan and L. Nail (2004) "The determinants of positive long-term performance in strategic mergers: Corporate focus and cash", *Journal of Banking & Finance*, 28, 523-552.
- Mitchell, M. L. and J. H. Mulherin (1996) "The impact of industry shocks on takeover and restructuring activity", *Journal of Financial Economics*, 41, 193-229.
- Moeller, S. B., F. P. Schlingemann and R. M. Stulz (2004) "Firm size and the gains from acquisitions", *Journal of Financial Economics*, 73, 201-228.
- Myers, S. and N. Majluf (1984) "The Method of Payment in corporate acquisitions, investment opportunities, and management ownership", *Journal of Financial Economics*, 13, 187-221.

- Powell, R. G. and A. W. Stark (2004) "Does operating performance increase post-takeover for UK takeovers? A comparison of performance measures and benchmarks", *Journal of Corporate Finance*, In Press, Corrected Proof,
- Ramaswamy, K. P. and J. F. Waagelein (2003) "Firm Financial Performance Following Mergers", *Review of Quantitative Finance and Accounting*, 20, 115-126.
- Roll, R. (1986) "The Hubris Hypothesis of Corporate Takeovers", *Journal of Business*, 59, 197-216.
- Schwert, G. W. (2000) "Hostility in Takeovers: In the Eyes of the Beholder?" *The Journal of Finance*, 55, 2599-2640.
- Sharma, D. S. and J. Ho (2002) "The Impact of Acquisitions on Operating Performance: Some Australian Evidence", *Journal of Business Finance & Accounting*, 29, 155-200.
- Shleifer, A. and R. W. Vishny (2003) "Stock market driven acquisitions", *Journal of Financial Economics*, 70, 295-311.
- Simmonds, D. P. (2003) "A Comparison of Two Widely Applied Models of Shareholder Returns in the Context of Takeover Offer Gains for Australian Bidders", *Australian Journal of Management*, 28, 23-61.
- Singh, R. (1998) "Takeover Bidding with Toeholds: The Case of the Owner's Curse", *The Review of Financial Studies*, 11, 679-704.
- Subramaniam, C. and L. A. Daley (2000) "Free Cash Flow, Golden Parachutes, and the Discipline of Takeover Activity", *Journal of Business Finance & Accounting*, 27, 1-36.
- Switzer, J. A. (1996) "Evidence on Real Gains in Corporate Acquisitions", *Journal of Economics and Business*, 48, 443-460.
- Travlos, N. (1987) "Corporate Takeover Bids, Method of Payment and Bidding Firms' Stock Returns", *Journal of Finance*, 42, 943-963.
- Walker, M. M. (2000) "Corporate Takeovers, Strategic Objectives and Acquiring-Firm Shareholder Wealth", *Financial Management*, 29, 53-66.
- Walter, T. (1984) "Australian Takeovers: Capital Market Efficiency and Shareholder Risk and Return", *Australian Journal of Management*, 9, 63-118.

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Table A5.2.1 – Acquiring Firm Individual Year Accounting Ratios Prior to the Merger*Panel A: HPR_{CP}/Sales*

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	61	0.185	0.251	0.991	0.270	0.129	0.080	-0.555
-2	67	0.211	0.277	0.926	0.292	0.176	0.098	-1.008
-1	72	0.231	0.278	1.721	0.315	0.185	0.100	-0.626

Panel B: HPR_{CP}/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	72	0.094	0.163	0.394	0.176	0.110	0.049	-0.813
-2	78	0.117	0.157	0.441	0.181	0.131	0.080	-0.526
-1	80	0.129	0.149	0.470	0.206	0.141	0.074	-0.566

Panel C: Operating Cash Flows/Sales

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	61	0.166	0.258	1.041	0.241	0.122	0.061	-0.691
-2	67	0.167	0.219	0.923	0.240	0.120	0.048	-0.389
-1	72	0.226	0.564	4.067	0.252	0.144	0.045	-1.041

Panel D: Operating Cash Flow/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	72	0.081	0.131	0.385	0.161	0.093	0.031	-0.239
-2	78	0.087	0.131	0.400	0.144	0.095	0.023	-0.399
-1	80	0.078	0.225	0.538	0.176	0.110	0.006	-1.344

Panel E: Return On Assets (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	72	0.029	0.141	0.249	0.087	0.056	0.011	-0.870
-2	78	0.049	0.141	0.440	0.099	0.071	0.030	-0.531
-1	80	0.051	0.123	0.187	0.118	0.071	0.031	-0.570

Panel F: Return On Assets (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	72	0.030	0.141	0.249	0.088	0.056	0.011	-0.870
-2	78	0.048	0.140	0.440	0.099	0.071	0.030	-0.531
-1	80	0.051	0.124	0.253	0.118	0.071	0.028	-0.570

Panel G: Return On Equity (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	72	0.084	0.518	3.886	0.158	0.081	-0.006	-1.286
-2	78	0.097	0.228	0.835	0.177	0.112	0.051	-1.017
-1	80	0.094	0.173	0.478	0.185	0.112	0.050	-0.594

Panel H: Return On Equity (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	72	0.087	0.517	3.886	0.158	0.087	-0.006	-1.286
-2	78	0.095	0.227	0.835	0.177	0.112	0.051	-1.017
-1	80	0.095	0.174	0.478	0.188	0.112	0.045	-0.594

Panel I: Profit Margin (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	61	0.074	0.201	0.733	0.124	0.069	0.023	-0.619
-2	67	0.097	0.256	0.750	0.168	0.089	0.032	-1.344
-1	72	0.124	0.267	1.604	0.159	0.102	0.039	-0.800

Panel J: Profit Margin (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	61	0.077	0.203	0.733	0.124	0.069	0.023	-0.619
-2	67	0.096	0.256	0.750	0.168	0.089	0.032	-1.344
-1	72	0.124	0.267	1.604	0.159	0.102	0.037	-0.800

Panel K: Asset Turnover

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	61	0.943	0.636	2.968	1.292	0.736	0.511	0.096
-2	67	0.959	0.723	4.509	1.196	0.791	0.512	0.050
-1	72	0.954	0.727	4.015	1.192	0.721	0.534	0.074

Panel L: Current Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	72	3.598	7.961	50.203	2.082	1.304	1.068	0.024
-2	78	3.378	7.246	57.877	2.417	1.509	1.013	0.640
-1	80	4.437	11.321	76.090	2.576	1.535	1.134	0.342

Panel M: Operating Cash Flow Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	72	0.362	1.943	9.297	0.766	0.329	0.066	-10.099
-2	78	0.242	1.317	4.412	0.724	0.325	0.109	-7.910
-1	80	-0.056	2.512	4.213	0.757	0.347	0.046	-15.434

Panel N: Common Earnings Leverage (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	72	1.037	1.539	13.046	1.000	0.930	0.789	-1.678
-2	78	6.362	47.491	420.370	0.999	0.920	0.822	0.285
-1	80	0.876	0.226	1.977	0.971	0.913	0.810	0.083

Panel O: Common Earnings Leverage (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	72	1.059	1.511	13.046	1.000	0.930	0.789	-1.158
-2	78	6.362	47.491	420.370	0.998	0.920	0.822	0.285
-1	80	0.871	0.240	1.977	0.971	0.913	0.810	-0.134

Panel P: Capital Structure Leverage

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	72	0.936	9.503	6.558	2.425	1.854	1.298	-78.060
-2	78	2.146	2.162	19.642	2.255	1.908	1.423	1.013
-1	80	2.174	1.651	14.362	2.404	1.852	1.487	0.850

Panel Q: Investing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	72	-0.174	0.287	0.374	-0.032	-0.085	-0.203	-1.204
-2	78	-0.160	0.194	0.059	-0.027	-0.088	-0.256	-1.089
-1	80	-0.176	0.312	0.756	-0.029	-0.106	-0.210	-1.637

Panel R: Financing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	72	0.112	0.341	1.306	0.096	-0.006	-0.053	-0.315
-2	78	0.158	0.376	1.948	0.213	0.013	-0.053	-0.147
-1	80	0.163	0.378	1.904	0.182	0.029	-0.029	-0.396

This table reports ratios of accounting performance and other financial characteristics for acquiring firms. The method of calculating these ratios is set out in Table 4.1.1.

Table A5.2.2 – Target Firm Individual Year Accounting Ratios Prior to the Merger*Panel A: HPR_{CF}/Sales*

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	61	0.202	0.260	1.451	0.267	0.117	0.066	-0.292
-2	69	-0.258	3.777	0.807	0.295	0.153	0.065	-31.143
-1	70	-0.343	3.744	1.602	0.224	0.109	0.025	-31.000

Panel B: HPR_{CF}/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	73	0.091	0.271	1.259	0.152	0.114	0.039	-0.649
-2	80	0.096	0.137	0.414	0.185	0.102	0.038	-0.400
-1	81	0.047	0.246	0.757	0.150	0.085	0.013	-1.167

Panel C: Operating Cash Flows/Sales

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	61	0.167	0.193	0.878	0.266	0.098	0.052	-0.148
-2	69	-0.308	4.121	0.820	0.303	0.135	0.050	-34.000
-1	70	-0.071	2.043	0.880	0.293	0.110	0.052	-16.833

Panel D: Operating Cash Flow/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	73	0.095	0.250	1.441	0.130	0.082	0.022	-0.586
-2	80	0.068	0.161	0.375	0.164	0.094	0.029	-0.779
-1	81	0.073	0.178	0.680	0.146	0.086	0.031	-0.738

Panel E: Return On Assets (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	73	0.019	0.227	0.965	0.089	0.048	0.001	-0.802
-2	80	0.017	0.129	0.242	0.093	0.050	-0.004	-0.584
-1	81	-0.023	0.242	0.753	0.082	0.031	-0.058	-1.179

Panel F: Return On Assets (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	73	0.019	0.227	0.965	0.091	0.048	0.001	-0.802
-2	80	0.020	0.131	0.364	0.093	0.050	-0.004	-0.584
-1	81	-0.023	0.242	0.753	0.082	0.031	-0.058	-1.179

Panel G: Return On Equity (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	73	-0.018	0.462	1.538	0.155	0.061	-0.024	-1.807
-2	80	0.028	0.230	0.492	0.140	0.065	-0.044	-0.745
-1	81	-0.052	0.402	0.829	0.135	0.036	-0.120	-2.383

Panel H: Return On Equity (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	73	-0.019	0.461	1.538	0.140	0.063	-0.026	-1.807
-2	80	0.032	0.234	0.592	0.141	0.065	-0.044	-0.745
-1	81	-0.051	0.402	0.829	0.135	0.036	-0.120	-2.383

Panel I: Profit Margin (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	61	0.099	0.225	1.443	0.129	0.063	0.014	-0.442
-2	69	-0.385	3.814	0.802	0.140	0.065	0.009	-31.571
-1	70	-0.476	3.971	1.599	0.097	0.044	-0.036	-33.000

Panel J: Profit Margin (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	61	0.100	0.225	1.443	0.129	0.064	0.014	-0.442
-2	69	-0.381	3.814	0.802	0.140	0.065	0.009	-31.571
-1	70	-0.476	3.971	1.599	0.097	0.044	-0.036	-33.000

Panel K: Asset Turnover

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	61	1.138	0.920	4.644	1.523	0.987	0.432	0.093
-2	69	1.100	0.986	4.879	1.502	0.842	0.440	0.013
-1	70	1.031	0.890	4.331	1.443	0.861	0.430	0.012

Panel L: Current Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	73	4.025	10.351	82.708	2.911	1.699	0.979	0.066
-2	80	3.558	7.068	55.917	2.730	1.719	1.097	0.010
-1	81	3.840	8.699	66.294	2.390	1.520	0.977	0.040

Panel M: Operating Cash Flow Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	73	0.338	1.409	6.735	0.714	0.290	0.039	-5.631
-2	80	0.010	2.297	2.948	0.731	0.245	0.002	-15.792
-1	81	0.111	2.755	8.043	0.766	0.248	0.025	-17.265

Panel N: Common Earnings Leverage (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	73	0.836	0.639	2.603	1.000	0.928	0.756	-3.905
-2	80	-131.333	1182.418	1.308	1.000	0.921	0.796	-10575.00
-1	81	0.963	0.724	6.140	1.010	0.969	0.838	-2.092

Panel O: Common Earnings Leverage (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	73	0.838	0.638	2.603	1.000	0.928	0.756	-3.905
-2	80	-131.333	1182.418	1.308	1.000	0.921	0.796	-10575.00
-1	81	0.865	0.519	2.062	1.009	0.966	0.835	-2.092

Panel P: Capital Structure Leverage

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	73	2.118	1.700	9.289	2.259	1.685	1.302	-2.320
-2	80	2.218	1.625	10.754	2.323	1.740	1.304	1.010
-1	81	2.323	2.526	20.783	2.221	1.758	1.337	1.000

Panel Q: Investing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	73	-0.114	0.224	0.295	-0.004	-0.050	-0.181	-1.137
-2	80	-0.114	0.223	0.951	-0.008	-0.080	-0.225	-0.920
-1	81	-0.146	0.227	0.328	-0.032	-0.089	-0.234	-1.331

Panel R: Financing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	73	0.046	0.358	1.524	0.028	-0.023	-0.077	-1.060
-2	80	0.105	0.241	0.889	0.154	0.011	-0.020	-0.270
-1	81	0.113	0.321	1.505	0.132	0.001	-0.038	-0.414

This table reports ratios of accounting performance and other financial characteristics for target firms. The method of calculating these ratios is set out in Table 4.1.1.

Table A5.2.3 – Combined Sample Firm Individual Year Accounting Ratios*Panel A: HPR_{CF}/Sales*

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	0.199	0.282	1.166	0.252	0.137	0.082	-0.846
-2	72	-2.934	27.227	4.069	0.306	0.166	0.078	-230.714
-1	75	-0.556	6.842	3.853	0.282	0.158	0.069	-58.833
0	73	-0.040	1.418	1.098	0.259	0.136	0.070	-11.488
1	71	0.018	1.453	3.277	0.267	0.156	0.053	-10.998
2	65	-9.294	75.928	4.720	0.262	0.135	0.062	-612.000
3	63	-0.132	1.280	1.631	0.259	0.106	-0.040	-8.336

Panel B: HPR_{CF}/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.091	0.163	0.363	0.165	0.113	0.057	-0.741
-2	77	0.120	0.109	0.413	0.168	0.121	0.080	-0.215
-1	80	0.112	0.130	0.446	0.177	0.118	0.073	-0.410
0	81	0.044	0.243	0.388	0.142	0.092	0.038	-1.639
1	77	0.072	0.164	0.363	0.152	0.115	0.065	-0.679
2	69	0.046	0.286	0.896	0.162	0.119	0.050	-0.997
3	66	0.008	0.307	0.705	0.145	0.098	-0.056	-1.514

Panel C: Operating Cash Flows/Sales

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	0.167	0.205	0.936	0.226	0.109	0.055	-0.271
-2	72	-3.532	31.471	0.864	0.244	0.131	0.057	-266.857
-1	75	-3.585	33.292	5.271	0.259	0.146	0.041	-288.000
0	73	0.079	0.753	0.873	0.262	0.141	0.070	-6.006
1	71	0.054	1.228	3.833	0.268	0.141	0.063	-7.740
2	65	-3.367	28.601	1.514	0.242	0.121	0.070	-230.400
3	63	-0.019	1.021	0.855	0.246	0.124	0.054	-5.658

Panel D: Operating Cash Flow/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.086	0.110	0.373	0.153	0.093	0.038	-0.254
-2	77	0.091	0.113	0.380	0.140	0.094	0.040	-0.352
-1	80	0.091	0.139	0.470	0.166	0.108	0.032	-0.369
0	81	0.068	0.103	0.289	0.127	0.076	0.040	-0.337
1	77	0.083	0.123	0.358	0.147	0.094	0.040	-0.340
2	69	0.101	0.131	0.526	0.146	0.102	0.051	-0.353
3	66	0.075	0.193	0.816	0.133	0.096	0.054	-1.027

Panel E: Return On Assets (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.023	0.141	0.185	0.083	0.054	0.023	-0.788
-2	77	0.050	0.088	0.368	0.087	0.063	0.029	-0.242
-1	80	0.037	0.119	0.336	0.088	0.059	0.020	-0.601
0	81	-0.011	0.229	0.301	0.073	0.047	0.002	-1.642
1	77	-0.008	0.169	0.255	0.082	0.052	-0.022	-0.743
2	69	-0.037	0.260	0.374	0.080	0.048	-0.013	-0.956
3	66	-0.070	0.301	0.358	0.078	0.037	-0.110	-1.560

Panel F: Return On Assets (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.024	0.142	0.185	0.087	0.055	0.023	-0.788
-2	77	0.050	0.088	0.368	0.087	0.066	0.029	-0.242
-1	80	0.037	0.120	0.336	0.088	0.060	0.018	-0.601
0	81	-0.012	0.229	0.301	0.077	0.043	0.002	-1.642
1	77	-0.012	0.167	0.163	0.079	0.052	-0.022	-0.743
2	69	-0.041	0.260	0.374	0.080	0.040	-0.019	-0.956
3	66	-0.070	0.301	0.358	0.078	0.037	-0.110	-1.560

Panel G: Return On Equity (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.021	0.285	0.375	0.142	0.083	0.027	-1.703
-2	77	0.090	0.160	0.675	0.157	0.099	0.055	-0.378
-1	80	0.063	0.172	0.439	0.154	0.100	0.028	-0.672
0	81	0.002	0.325	0.580	0.121	0.084	-0.005	-2.012
1	77	-0.028	0.340	0.410	0.141	0.085	-0.114	-1.728
2	69	-0.241	1.318	0.526	0.145	0.074	-0.103	-7.448
3	66	0.466	5.121	41.195	0.138	0.066	-0.192	-2.111

Panel H: Return On Equity (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.023	0.287	0.375	0.146	0.088	0.027	-1.717
-2	77	0.090	0.160	0.675	0.157	0.101	0.055	-0.378
-1	80	0.064	0.173	0.439	0.167	0.100	0.017	-0.672
0	81	0.000	0.325	0.580	0.118	0.075	-0.005	-2.012
1	77	-0.033	0.337	0.410	0.136	0.085	-0.114	-1.728
2	69	-0.247	1.317	0.526	0.145	0.070	-0.107	-7.448
3	66	0.465	5.121	41.195	0.138	0.064	-0.192	-2.111

Panel I: Profit Margin (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	0.085	0.245	1.128	0.137	0.069	0.029	-1.047
-2	72	-3.156	28.087	3.626	0.163	0.080	0.026	-238.143
-1	75	-0.831	8.027	2.180	0.151	0.066	0.028	-69.333
0	73	-0.163	1.455	0.862	0.129	0.069	0.021	-11.930
1	71	-0.132	1.457	2.734	0.117	0.051	-0.028	-11.279
2	65	-9.652	77.345	1.185	0.100	0.054	0.019	-623.624
3	63	-0.275	1.288	1.051	0.132	0.033	-0.144	-8.594

Panel J: Profit Margin (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	0.088	0.247	1.128	0.137	0.069	0.029	-1.047
-2	72	-3.155	28.087	3.626	0.163	0.080	0.026	-238.143
-1	75	-0.813	8.036	3.582	0.151	0.066	0.025	-69.333
0	73	-0.165	1.455	0.862	0.139	0.058	0.021	-11.930
1	71	-0.173	1.416	1.068	0.116	0.050	-0.032	-11.279
2	65	-9.656	77.345	1.185	0.100	0.049	0.017	-623.624
3	63	-0.276	1.288	1.051	0.132	0.033	-0.144	-8.594

Panel K: Asset Turnover

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	0.867	0.548	2.200	1.203	0.671	0.466	0.092
-2	72	0.942	0.796	4.534	1.254	0.655	0.471	0.001
-1	75	0.915	0.745	4.067	1.184	0.702	0.432	0.001
0	73	0.801	0.700	4.323	1.017	0.609	0.395	0.013
1	71	0.887	0.746	3.886	1.034	0.697	0.425	0.018
2	65	0.905	0.718	3.938	1.058	0.734	0.492	0.002
3	63	0.872	0.694	3.681	1.099	0.739	0.386	0.020

Panel L: Current Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	2.262	3.133	23.957	2.267	1.443	1.103	0.176
-2	77	2.784	5.496	44.568	2.316	1.518	1.115	0.660
-1	80	3.667	8.599	65.307	2.389	1.551	1.143	0.371
0	81	2.721	5.612	43.642	2.112	1.311	1.030	0.121
1	77	2.813	5.676	39.081	1.966	1.457	1.142	0.095
2	69	4.422	13.119	105.686	2.222	1.572	1.096	0.252
3	66	2.803	6.337	45.220	1.900	1.369	1.078	0.121

Panel M: Operating Cash Flow Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.291	0.993	3.210	0.605	0.263	0.084	-4.281
-2	77	0.272	1.110	3.384	0.822	0.359	0.157	-5.338
-1	80	0.073	2.054	5.357	0.755	0.335	0.065	-11.481
0	81	0.034	2.132	1.724	0.657	0.238	0.083	-17.596
1	77	0.020	3.210	6.639	0.600	0.324	0.065	-24.738
2	69	0.080	1.863	2.308	0.692	0.303	0.135	-11.578
3	66	0.004	2.187	3.044	0.536	0.281	0.064	-15.104

Panel N: Common Earnings Leverage (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.584	2.265	3.093	0.974	0.876	0.713	-16.996
-2	77	0.763	1.048	2.427	0.979	0.886	0.795	-7.686
-1	80	0.851	0.282	1.821	0.979	0.878	0.777	-0.767
0	81	0.896	0.465	4.261	0.994	0.869	0.779	-0.426
1	77	1.101	1.581	14.409	1.000	0.852	0.774	0.347
2	69	0.806	0.534	2.590	1.000	0.852	0.713	-1.967
3	66	0.770	1.511	3.177	1.040	0.906	0.738	-10.858

Panel O: Common Earnings Leverage (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.540	2.642	3.121	0.974	0.886	0.721	-20.040
-2	77	0.763	1.048	2.427	0.979	0.886	0.795	-7.686
-1	80	0.846	0.288	1.821	0.979	0.878	0.778	-0.767
0	81	0.888	0.467	4.261	0.994	0.861	0.772	-0.426
1	77	1.101	1.581	14.409	1.003	0.852	0.774	0.347
2	69	0.800	0.536	2.590	1.000	0.852	0.711	-1.967
3	66	0.770	1.511	3.177	1.040	0.906	0.738	-10.858

Panel P: Capital Structure Leverage

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	2.632	5.049	41.477	2.290	1.776	1.394	1.006
-2	77	2.234	1.999	17.665	2.347	1.893	1.452	1.019
-1	80	2.203	1.557	13.443	2.421	1.914	1.519	0.964
0	81	2.249	1.017	7.783	2.582	2.102	1.706	1.013
1	77	2.503	1.452	10.587	2.746	2.197	1.829	1.009
2	69	2.475	1.430	10.192	2.663	2.123	1.798	1.013
3	66	1.370	6.295	5.442	2.692	2.157	1.754	-47.644

Panel Q: Investing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.153	0.216	0.065	-0.030	-0.098	-0.183	-1.034
-2	77	-0.126	0.149	0.277	-0.026	-0.093	-0.200	-0.605
-1	80	-0.153	0.214	0.399	-0.029	-0.108	-0.240	-0.982
0	81	-0.176	0.223	0.186	-0.041	-0.132	-0.262	-1.083
1	77	-0.085	0.182	0.786	-0.018	-0.075	-0.127	-0.512
2	69	-0.083	0.171	0.503	-0.024	-0.063	-0.136	-0.590
3	66	-0.062	0.204	0.360	0.007	-0.042	-0.109	-1.420

Panel R: Financing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.073	0.252	1.131	0.085	-0.006	-0.060	-0.164
-2	77	0.096	0.207	0.754	0.155	0.027	-0.029	-0.114
-1	80	0.126	0.265	0.992	0.206	0.051	-0.028	-0.307
0	81	0.136	0.251	1.180	0.186	0.048	-0.004	-0.151
1	77	0.018	0.186	0.477	0.107	-0.001	-0.062	-0.901
2	69	0.028	0.213	0.984	0.070	-0.012	-0.077	-0.284
3	66	0.009	0.205	1.110	0.054	-0.013	-0.076	-0.598

This table reports ratios of accounting performance and other financial characteristics for sample firms. Ratios in the pre-merger period are calculated using a combination of target and acquiring firm financial statement data, explained in section 4.1.1. The method of calculating these ratios is set out in Table 4.1.1.

Table A5.2.4 – Control Group One Individual Year Accounting Ratios*Panel A: HPR_{CF}/Sales*

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	-2.743	20.376	1.123	0.263	0.154	0.072	-156.105
-2	71	-1.005	7.934	3.969	0.262	0.164	0.070	-64.222
-1	75	-1.802	15.999	4.963	0.249	0.129	0.061	-137.783
0	75	-0.136	1.591	3.556	0.225	0.123	0.051	-10.452
1	72	-0.127	1.539	2.540	0.218	0.138	0.046	-10.492
2	63	-0.939	5.399	1.673	0.234	0.115	0.042	-38.531
3	60	-0.213	1.839	1.723	0.203	0.131	0.029	-13.509

Panel B: HPR_{CF}/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.040	0.433	0.671	0.181	0.112	0.034	-2.550
-2	77	0.050	0.268	0.771	0.153	0.116	0.051	-1.501
-1	80	0.049	0.344	0.453	0.175	0.116	0.048	-2.461
0	81	0.052	0.231	0.457	0.166	0.103	0.033	-1.223
1	77	0.057	0.218	0.404	0.160	0.099	0.017	-1.257
2	69	0.020	0.338	0.339	0.158	0.103	0.013	-2.177
3	66	0.043	0.179	0.302	0.147	0.095	-0.003	-0.591

Panel C: Operating Cash Flows/Sales

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	-2.619	19.322	0.784	0.227	0.130	0.054	-147.895
-2	71	-0.113	1.575	2.067	0.233	0.114	0.041	-11.291
-1	75	-0.856	7.337	2.670	0.305	0.145	0.058	-60.435
0	75	-0.120	2.432	5.529	0.246	0.132	0.043	-18.491
1	72	-0.170	1.717	1.792	0.198	0.098	0.048	-13.293
2	63	-1.057	8.168	0.716	0.236	0.101	0.052	-64.163
3	60	-0.052	0.862	1.381	0.211	0.087	0.039	-4.135

Panel D: Operating Cash Flow/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.056	0.347	0.691	0.148	0.100	0.012	-2.416
-2	77	0.068	0.144	0.456	0.144	0.082	0.009	-0.434
-1	80	0.093	0.228	0.740	0.179	0.100	0.031	-1.080
0	81	0.087	0.188	0.540	0.161	0.093	0.032	-0.799
1	77	0.058	0.199	0.487	0.126	0.096	0.039	-1.211
2	69	0.060	0.132	0.311	0.131	0.086	0.006	-0.486
3	66	0.065	0.173	0.348	0.126	0.085	0.015	-1.034

Panel E: Return On Assets (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.025	0.417	0.596	0.077	0.057	0.012	-2.562
-2	77	-0.009	0.248	0.327	0.082	0.060	0.019	-1.503
-1	80	-0.033	0.325	0.210	0.086	0.059	-0.011	-2.467
0	81	-0.014	0.204	0.268	0.077	0.048	-0.016	-1.245
1	77	-0.007	0.198	0.224	0.079	0.048	-0.001	-1.270
2	69	-0.045	0.339	0.168	0.080	0.052	-0.026	-2.349
3	66	-0.016	0.163	0.212	0.078	0.040	-0.021	-0.594

Panel F: Return On Assets (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.022	0.419	0.596	0.079	0.058	0.011	-2.562
-2	77	-0.009	0.248	0.327	0.082	0.060	0.012	-1.503
-1	80	-0.031	0.324	0.210	0.086	0.059	-0.011	-2.467
0	81	-0.014	0.204	0.268	0.077	0.048	-0.016	-1.245
1	77	-0.007	0.198	0.224	0.079	0.048	0.004	-1.270
2	69	-0.045	0.339	0.168	0.080	0.052	-0.026	-2.349
3	66	-0.016	0.163	0.212	0.078	0.040	-0.021	-0.594

Panel G: Return On Equity (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.014	0.486	1.042	0.165	0.092	0.018	-2.859
-2	77	-0.003	0.336	0.435	0.151	0.106	0.013	-1.542
-1	80	-0.015	0.402	0.507	0.151	0.081	-0.062	-2.617
0	81	-0.009	0.315	0.560	0.137	0.068	-0.049	-1.602
1	77	-0.020	0.503	0.616	0.144	0.068	-0.031	-3.812
2	69	0.055	0.474	2.967	0.156	0.076	-0.049	-0.981
3	66	-0.055	0.470	0.718	0.152	0.056	-0.049	-2.336

Panel H: Return On Equity (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.019	0.490	1.042	0.166	0.092	0.009	-2.859
-2	77	-0.004	0.336	0.435	0.151	0.106	0.013	-1.542
-1	80	-0.007	0.388	0.507	0.158	0.081	-0.062	-2.617
0	81	-0.009	0.315	0.560	0.137	0.068	-0.049	-1.602
1	77	-0.021	0.505	0.616	0.144	0.068	-0.031	-3.812
2	69	0.055	0.474	2.967	0.156	0.076	-0.049	-0.981
3	66	-0.055	0.470	0.718	0.152	0.056	-0.049	-2.336

Panel I: Profit Margin (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	-2.856	20.460	1.058	0.131	0.074	0.027	-156.842
-2	71	-1.118	7.925	2.364	0.145	0.080	0.027	-64.333
-1	75	-2.013	16.009	2.936	0.118	0.061	0.008	-138.087
0	75	-0.268	1.574	1.917	0.094	0.055	0.002	-10.638
1	72	-0.251	1.570	1.323	0.123	0.050	0.011	-10.846
2	63	-1.099	5.681	0.930	0.118	0.058	-0.001	-40.539
3	60	-0.318	1.847	0.930	0.097	0.054	-0.008	-13.744

Panel J: Profit Margin (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	-2.849	20.461	1.058	0.132	0.074	0.025	-156.842
-2	71	-1.120	7.925	2.364	0.145	0.080	0.025	-64.333
-1	75	-2.013	16.009	2.936	0.118	0.061	0.008	-138.087
0	75	-0.268	1.574	1.917	0.094	0.055	0.002	-10.638
1	72	-0.249	1.571	1.323	0.123	0.052	0.013	-10.846
2	63	-1.099	5.681	0.930	0.118	0.058	-0.001	-40.539
3	60	-0.318	1.847	0.930	0.097	0.054	-0.008	-13.744

Panel K: Asset Turnover

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	1.006	1.061	5.640	1.074	0.702	0.359	0.016
-2	71	0.942	1.007	5.633	1.096	0.652	0.364	0.023
-1	75	1.083	1.157	6.480	1.280	0.694	0.421	0.018
0	75	0.993	0.942	5.412	1.236	0.749	0.355	0.029
1	72	0.977	0.887	4.201	1.145	0.687	0.363	0.020
2	63	0.985	0.901	4.062	1.181	0.740	0.424	0.004
3	60	1.001	0.914	4.086	1.183	0.693	0.379	0.038

Panel L: Current Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	3.972	7.094	35.972	2.598	1.375	1.003	0.190
-2	77	3.694	8.585	68.389	2.253	1.594	0.972	0.083
-1	80	3.889	9.844	70.727	2.363	1.606	1.002	0.069
0	81	6.387	20.941	139.193	2.200	1.477	1.027	0.328
1	77	5.634	24.092	205.525	2.137	1.441	1.004	0.077
2	69	8.900	42.243	337.059	2.083	1.230	0.949	0.048
3	66	9.248	35.895	240.674	2.068	1.405	1.053	0.065

Panel M: Operating Cash Flow Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.400	3.473	3.205	0.516	0.290	0.024	-23.258
-2	77	-0.667	5.288	4.601	0.531	0.265	0.061	-35.925
-1	80	-0.368	4.578	4.867	0.619	0.354	0.076	-33.910
0	81	-0.102	2.752	2.503	0.643	0.319	0.100	-20.931
1	77	-0.061	2.745	8.302	0.591	0.223	0.028	-17.562
2	69	0.212	1.140	4.245	0.518	0.228	0.027	-6.141
3	66	0.439	1.167	6.988	0.448	0.281	0.045	-1.682

Panel N: Common Earnings Leverage (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.831	0.410	1.826	1.000	0.921	0.748	-1.703
-2	77	0.881	0.170	1.222	1.000	0.944	0.779	0.195
-1	80	0.902	0.452	3.781	1.000	0.932	0.746	-1.303
0	81	0.807	0.944	1.853	1.000	0.936	0.775	-7.295
1	77	0.877	0.829	5.819	1.000	0.907	0.751	-3.319
2	69	1.112	2.658	22.245	1.000	0.909	0.793	-2.639
3	66	0.758	1.095	1.842	1.000	0.898	0.738	-7.295

Panel O: Common Earnings Leverage (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.816	0.451	1.826	1.000	0.938	0.780	-1.703
-2	77	0.902	0.217	2.113	1.000	0.956	0.833	0.195
-1	80	0.903	0.452	3.781	1.000	0.932	0.746	-1.303
0	81	0.807	0.944	1.853	1.000	0.936	0.775	-7.295
1	77	0.812	0.601	3.348	1.000	0.902	0.751	-3.319
2	69	1.112	2.658	22.245	1.000	0.909	0.793	-2.639
3	66	0.758	1.095	1.842	1.000	0.898	0.738	-7.295

Panel P: Capital Structure Leverage

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	2.346	2.569	18.945	2.228	1.916	1.324	1.012
-2	77	2.129	1.915	15.268	2.277	1.758	1.301	0.832
-1	80	1.980	0.847	4.814	2.224	1.919	1.323	0.796
0	81	1.997	0.784	5.444	2.293	1.912	1.447	1.009
1	77	2.237	1.192	8.146	2.602	2.031	1.486	1.005
2	69	2.120	1.142	8.099	2.522	1.972	1.448	-1.227
3	66	2.329	1.330	9.333	2.700	2.114	1.583	-0.180

Panel Q: Investing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.066	0.220	1.007	-0.008	-0.070	-0.108	-0.694
-2	77	-0.117	0.179	0.504	-0.021	-0.070	-0.189	-0.835
-1	80	-0.115	0.156	0.323	-0.029	-0.087	-0.191	-0.771
0	81	-0.094	0.163	0.824	-0.014	-0.082	-0.152	-0.481
1	77	-0.113	0.174	0.362	-0.023	-0.077	-0.171	-0.972
2	69	-0.074	0.156	0.514	-0.007	-0.045	-0.126	-0.692
3	66	-0.072	0.119	0.513	-0.015	-0.061	-0.137	-0.300

Panel R: Financing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.113	0.375	2.165	0.107	0.018	-0.048	-0.649
-2	77	0.053	0.256	0.977	0.080	-0.018	-0.067	-0.815
-1	80	0.077	0.295	1.404	0.108	0.003	-0.060	-0.482
0	81	0.041	0.201	0.888	0.090	0.008	-0.056	-0.351
1	77	0.048	0.216	1.287	0.078	0.003	-0.026	-0.378
2	69	0.035	0.189	1.061	0.058	0.000	-0.050	-0.392
3	66	0.048	0.181	0.823	0.074	0.008	-0.055	-0.168

This table reports ratios of accounting performance and other financial characteristics for sample firms. Ratios in the pre-merger period are calculated using a combination of target and acquiring firm financial statement data, explained in section 4.1.1. The method of calculating these ratios is set out in Table 4.1.1.

Table A5.2.5 – Control Group Two Individual Year Accounting Ratios*Panel A: HPR_{CF}/Sales*

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	60	-0.157	1.978	2.033	0.280	0.135	0.082	-13.440
-2	71	0.164	2.712	19.400	0.275	0.117	0.051	-10.783
-1	75	0.096	0.501	1.241	0.285	0.108	0.068	-2.504
0	76	-0.007	0.639	1.022	0.220	0.108	0.057	-3.073
1	72	0.012	0.858	1.150	0.257	0.143	0.072	-5.975
2	64	-0.019	1.018	1.036	0.224	0.145	0.050	-7.202
3	64	-0.177	2.026	0.688	0.211	0.121	0.039	-15.807

Panel B: HPR_{CF}/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.062	0.326	0.671	0.150	0.117	0.051	-1.736
-2	77	0.078	0.198	0.775	0.157	0.112	0.045	-0.610
-1	80	0.117	0.303	2.349	0.145	0.108	0.059	-0.394
0	81	0.073	0.181	0.457	0.165	0.115	0.028	-0.537
1	77	0.069	0.199	0.387	0.168	0.108	0.057	-1.101
2	69	0.070	0.188	0.365	0.175	0.127	0.036	-0.574
3	66	0.072	0.225	0.499	0.166	0.105	0.051	-0.965

Panel C: Operating Cash Flows/Sales

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	60	-0.055	0.990	1.019	0.234	0.113	0.041	-4.985
-2	71	-0.237	1.945	0.788	0.224	0.099	0.038	-15.100
-1	75	0.056	0.516	1.080	0.188	0.107	0.061	-2.561
0	76	0.019	0.559	0.901	0.209	0.106	0.053	-2.739
1	72	0.114	0.322	0.897	0.261	0.121	0.058	-1.042
2	64	0.057	0.515	0.927	0.221	0.111	0.056	-2.882
3	64	0.035	0.608	0.913	0.189	0.098	0.022	-4.212

Panel D: Operating Cash Flow/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.087	0.176	0.691	0.163	0.110	0.035	-0.482
-2	77	0.072	0.148	0.484	0.142	0.082	0.035	-0.453
-1	80	0.083	0.164	0.588	0.153	0.099	0.052	-0.413
0	81	0.073	0.151	0.523	0.135	0.096	0.050	-0.340
1	77	0.078	0.157	0.454	0.150	0.096	0.045	-0.647
2	69	0.061	0.189	0.374	0.152	0.092	0.027	-0.627
3	66	0.070	0.201	0.345	0.172	0.111	0.022	-1.045

Panel E: Return On Assets (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.008	0.313	0.596	0.077	0.050	0.013	-1.740
-2	77	0.008	0.174	0.532	0.076	0.050	-0.005	-0.708
-1	80	0.053	0.273	2.187	0.078	0.053	0.004	-0.401
0	81	0.000	0.163	0.268	0.078	0.058	-0.039	-0.563
1	77	-0.006	0.194	0.224	0.075	0.045	0.006	-1.285
2	69	-0.009	0.163	0.220	0.076	0.045	-0.024	-0.574
3	66	-0.007	0.195	0.245	0.087	0.051	-0.009	-0.968

Panel F: Return On Assets (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.008	0.313	0.596	0.077	0.050	0.013	-1.740
-2	77	0.007	0.174	0.532	0.076	0.050	-0.005	-0.708
-1	80	0.053	0.273	2.187	0.078	0.053	0.004	-0.401
0	81	0.000	0.163	0.268	0.078	0.058	-0.039	-0.563
1	77	-0.007	0.194	0.224	0.075	0.045	0.006	-1.285
2	69	-0.010	0.164	0.220	0.076	0.045	-0.024	-0.574
3	66	-0.006	0.195	0.245	0.087	0.051	-0.009	-0.968

Panel G: Return On Equity (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.026	0.613	1.042	0.130	0.080	0.011	-4.127
-2	77	-0.003	0.283	0.640	0.131	0.070	-0.062	-1.490
-1	80	0.033	0.228	0.620	0.122	0.075	-0.010	-1.151
0	81	-0.007	0.286	0.544	0.124	0.085	-0.059	-1.105
1	77	0.026	0.488	3.323	0.130	0.067	-0.013	-1.968
2	69	-0.029	0.330	0.887	0.144	0.060	-0.063	-1.477
3	66	-0.058	0.492	0.641	0.152	0.082	-0.106	-2.870

Panel H: Return On Equity (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.026	0.613	1.042	0.130	0.080	0.011	-4.127
-2	77	-0.005	0.285	0.640	0.131	0.070	-0.062	-1.490
-1	80	0.033	0.227	0.620	0.122	0.075	-0.010	-1.151
0	81	-0.007	0.285	0.544	0.124	0.085	-0.059	-1.105
1	77	0.025	0.488	3.323	0.130	0.064	-0.013	-1.968
2	69	-0.031	0.332	0.887	0.144	0.060	-0.063	-1.477
3	66	-0.057	0.493	0.641	0.152	0.082	-0.106	-2.870

Panel I: Profit Margin (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	60	-0.294	1.969	0.934	0.127	0.064	0.027	-13.470
-2	71	0.022	2.753	19.146	0.131	0.050	0.009	-11.292
-1	75	-0.017	0.549	1.156	0.098	0.048	0.011	-2.957
0	76	-0.117	0.643	0.988	0.106	0.049	0.012	-2.770
1	72	-0.106	0.895	1.094	0.116	0.041	0.020	-6.440
2	64	-0.131	1.038	1.014	0.101	0.041	-0.005	-7.435
3	64	-0.274	2.022	0.649	0.104	0.041	-0.008	-15.907

Panel J: Profit Margin (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	60	-0.294	1.969	0.934	0.127	0.064	0.027	-13.470
-2	71	0.021	2.753	19.146	0.125	0.050	0.009	-11.292
-1	75	-0.017	0.549	1.156	0.098	0.048	0.011	-2.957
0	76	-0.117	0.643	0.988	0.106	0.049	0.012	-2.770
1	72	-0.108	0.895	1.094	0.113	0.041	0.020	-6.440
2	64	-0.131	1.038	1.014	0.101	0.041	-0.005	-7.435
3	64	-0.273	2.023	0.649	0.105	0.046	-0.008	-15.907

Panel K: Asset Turnover

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	60	1.185	1.707	12.211	1.360	0.930	0.376	0.015
-2	71	1.143	1.577	11.877	1.351	0.830	0.430	0.010
-1	75	1.168	1.664	13.175	1.377	0.871	0.417	0.025
0	76	1.075	1.134	7.093	1.279	0.840	0.429	0.049
1	72	1.186	2.345	19.842	1.235	0.857	0.416	0.021
2	64	1.283	2.506	20.253	1.359	0.886	0.480	0.029
3	64	1.322	2.773	22.359	1.282	0.799	0.502	0.043

Panel L: Current Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	3.594	6.081	34.134	2.365	1.745	1.313	0.679
-2	77	3.672	9.044	63.400	2.402	1.600	1.071	0.221
-1	80	5.251	18.626	159.167	2.778	1.537	1.202	0.150
0	81	5.397	20.936	169.500	2.075	1.543	1.201	0.160
1	77	2.898	6.522	54.000	2.104	1.447	1.119	0.110
2	69	6.094	32.492	270.556	1.889	1.372	1.106	0.145
3	66	3.435	13.311	109.130	1.859	1.366	1.049	0.343

Panel M: Operating Cash Flow Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.510	5.305	2.375	0.950	0.255	0.020	-40.516
-2	77	0.056	2.201	9.694	0.611	0.243	0.041	-12.661
-1	80	-0.796	6.891	2.881	0.617	0.298	0.103	-48.138
0	81	-1.168	10.272	2.881	0.547	0.280	0.109	-91.214
1	77	-0.774	8.612	2.509	0.591	0.309	0.083	-74.682
2	69	-1.782	14.952	2.687	0.544	0.280	0.029	-123.514
3	66	-1.694	15.021	2.973	0.619	0.232	-0.054	-121.563

Panel N: Common Earnings Leverage (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.836	0.377	1.581	1.000	0.922	0.780	-1.673
-2	77	0.986	0.643	3.781	1.000	0.956	0.815	-1.242
-1	80	0.762	1.834	6.114	1.000	0.911	0.736	-13.624
0	81	0.773	0.950	1.853	1.000	0.925	0.787	-7.295
1	77	0.866	0.479	3.348	1.000	0.889	0.805	-0.934
2	69	0.466	1.888	2.355	1.000	0.906	0.770	-7.295
3	66	1.118	1.125	6.114	1.007	0.888	0.794	-1.615

Panel O: Common Earnings Leverage (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.836	0.377	1.581	1.000	0.922	0.780	-1.673
-2	77	0.984	0.643	3.781	1.000	0.956	0.805	-1.242
-1	80	0.762	1.834	6.114	1.000	0.911	0.734	-13.624
0	81	0.772	0.950	1.853	1.000	0.925	0.787	-7.295
1	77	0.863	0.481	3.348	1.000	0.889	0.794	-0.934
2	69	0.465	1.888	2.355	1.000	0.906	0.770	-7.295
3	66	1.043	0.960	6.114	1.000	0.888	0.794	-1.615

Panel P: Capital Structure Leverage

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	1.934	0.823	4.769	2.194	1.834	1.275	1.015
-2	77	1.835	0.921	5.473	2.066	1.763	1.263	-0.813
-1	80	1.838	0.872	5.770	2.078	1.821	1.263	-0.558
0	81	1.864	1.002	6.178	2.267	1.876	1.283	-3.595
1	77	2.325	2.814	25.463	2.308	1.899	1.470	1.004
2	69	2.135	0.861	4.738	2.405	2.019	1.639	-0.015
3	66	2.319	0.995	5.440	2.859	2.119	1.667	-0.008

Panel Q: Investing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.149	0.252	0.173	-0.040	-0.068	-0.198	-1.654
-2	77	-0.097	0.198	0.647	-0.017	-0.080	-0.169	-0.839
-1	80	-0.138	0.213	0.614	-0.037	-0.098	-0.205	-1.137
0	81	-0.091	0.174	0.731	-0.025	-0.066	-0.152	-0.600
1	77	-0.129	0.156	0.043	-0.022	-0.079	-0.181	-0.776
2	69	-0.119	0.155	0.237	-0.025	-0.070	-0.158	-0.596
3	66	-0.056	0.197	1.007	-0.012	-0.063	-0.134	-0.499

Panel R: Financing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.088	0.312	1.623	0.096	0.014	-0.028	-0.649
-2	77	0.132	0.365	2.004	0.171	0.052	-0.019	-0.385
-1	80	0.116	0.283	1.526	0.172	0.011	-0.022	-0.190
0	81	0.088	0.236	1.418	0.103	0.022	-0.034	-0.295
1	77	0.075	0.248	1.520	0.103	0.017	-0.037	-0.370
2	69	0.080	0.214	0.751	0.107	0.015	-0.037	-0.392
3	66	0.056	0.249	0.988	0.132	0.003	-0.069	-0.370

This table reports ratios of accounting performance and other financial characteristics for sample firms. Ratios in the pre-merger period are calculated using a combination of target and acquiring firm financial statement data, explained in section 4.1.1. The method of calculating these ratios is set out in Table 4.1.1.

Table A5.2.6 – Combined Sample Firm Cumulative Period Accounting Ratios*Panel A: HPR_{Cp}/Sales*

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	-4.846	35.039	1.618	0.223	0.130	0.081	-242.538
Pre-2	61	-2.227	19.421	2.766	0.255	0.145	0.077	-151.385
Pre-1	71	-0.584	7.033	3.853	0.282	0.161	0.070	-58.833
Post-1	70	0.019	1.464	3.277	0.267	0.158	0.079	-10.998
Post-2	63	-13.510	106.034	2.560	0.243	0.123	0.064	-841.600
Post-3	50	-1.111	4.650	1.728	0.227	0.095	0.043	-22.190

Panel B: HPR_{Cp}/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.296	0.297	1.040	0.428	0.333	0.247	-0.811
Pre-2	66	0.220	0.189	0.739	0.298	0.243	0.171	-0.430
Pre-1	76	0.116	0.131	0.446	0.182	0.121	0.081	-0.410
Post-1	76	0.074	0.164	0.363	0.155	0.116	0.065	-0.679
Post-2	66	0.119	0.456	1.242	0.309	0.238	0.103	-2.101
Post-3	51	0.100	0.697	0.992	0.424	0.295	0.113	-3.026

Panel C: Operating Cash Flows/Sales

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	-7.259	51.487	1.098	0.228	0.111	0.057	-356.538
Pre-2	61	-4.336	35.444	1.867	0.237	0.130	0.062	-276.615
Pre-1	71	-3.783	34.219	5.271	0.268	0.150	0.051	-288.000
Post-1	70	0.054	1.236	3.833	0.268	0.145	0.068	-7.740
Post-2	63	-6.023	47.823	2.656	0.253	0.123	0.061	-379.400
Post-3	50	-0.589	3.013	0.656	0.249	0.100	0.060	-15.081

Panel D: Operating Cash Flow/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.259	0.305	1.070	0.416	0.283	0.138	-0.735
Pre-2	66	0.180	0.208	0.735	0.270	0.204	0.096	-0.559
Pre-1	76	0.099	0.131	0.470	0.168	0.110	0.045	-0.297
Post-1	76	0.084	0.124	0.358	0.151	0.096	0.041	-0.340
Post-2	66	0.177	0.234	0.581	0.283	0.192	0.107	-0.654
Post-3	51	0.249	0.381	0.849	0.399	0.291	0.192	-1.727

Panel E: Return On Assets (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.092	0.245	0.492	0.206	0.158	0.075	-0.848
Pre-2	66	0.081	0.164	0.359	0.160	0.119	0.066	-0.573
Pre-1	76	0.041	0.119	0.336	0.090	0.061	0.022	-0.601
Post-1	76	0.001	0.151	0.255	0.084	0.053	-0.021	-0.743
Post-2	66	-0.042	0.408	0.373	0.165	0.100	-0.017	-2.032
Post-3	51	-0.131	0.641	0.369	0.197	0.109	-0.074	-3.099

Panel F: Return On Assets (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.093	0.245	0.492	0.206	0.158	0.081	-0.848
Pre-2	66	0.081	0.164	0.365	0.160	0.122	0.065	-0.573
Pre-1	76	0.041	0.120	0.336	0.090	0.061	0.020	-0.601
Post-1	76	-0.003	0.148	0.163	0.081	0.052	-0.021	-0.743
Post-2	66	-0.049	0.405	0.321	0.154	0.089	-0.047	-2.032
Post-3	51	-0.132	0.640	0.369	0.197	0.109	-0.074	-3.099

Panel G: Return On Equity (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.195	0.356	1.161	0.406	0.267	0.117	-0.903
Pre-2	66	0.156	0.253	0.851	0.300	0.197	0.087	-0.654
Pre-1	76	0.073	0.159	0.439	0.164	0.101	0.031	-0.672
Post-1	76	-0.006	0.279	0.410	0.142	0.086	-0.109	-1.218
Post-2	66	-0.212	1.410	0.790	0.297	0.173	-0.154	-7.887
Post-3	51	-0.499	4.216	9.575	0.371	0.152	-0.455	-27.754

Panel H: Return On Equity (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.195	0.356	1.161	0.406	0.267	0.130	-0.903
Pre-2	66	0.156	0.253	0.851	0.288	0.197	0.092	-0.654
Pre-1	76	0.074	0.160	0.439	0.171	0.101	0.025	-0.672
Post-1	76	-0.011	0.276	0.410	0.139	0.085	-0.109	-1.218
Post-2	66	-0.224	1.407	0.790	0.285	0.147	-0.181	-7.887
Post-3	51	-0.501	4.215	9.575	0.370	0.152	-0.455	-27.754

Panel I: Profit Margin (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	-5.313	37.487	1.319	0.100	0.051	0.029	-259.615
Pre-2	61	-2.493	20.536	2.328	0.119	0.067	0.028	-160.231
Pre-1	71	-0.867	8.251	2.180	0.151	0.083	0.029	-69.333
Post-1	70	-0.123	1.466	2.734	0.117	0.053	-0.003	-11.279
Post-2	63	-13.893	107.815	1.948	0.111	0.044	0.000	-855.891
Post-3	50	-1.486	5.845	0.373	0.106	0.027	-0.038	-33.561

Panel J: Profit Margin (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	-5.313	37.487	1.319	0.100	0.051	0.029	-259.615
Pre-2	61	-2.482	20.538	2.328	0.119	0.067	0.027	-160.231
Pre-1	71	-0.847	8.260	3.582	0.151	0.083	0.028	-69.333
Post-1	70	-0.165	1.424	1.068	0.116	0.050	-0.028	-11.279
Post-2	63	-13.918	107.811	0.500	0.111	0.044	-0.004	-855.891
Post-3	50	-1.487	5.845	0.373	0.106	0.027	-0.038	-33.561

Panel K: Asset Turnover

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	2.794	1.832	8.104	3.770	2.142	1.536	0.002
Pre-2	61	1.998	1.625	8.323	2.455	1.443	1.009	0.001
Pre-1	71	0.925	0.750	4.067	1.184	0.702	0.434	0.001
Post-1	70	0.886	0.751	3.886	1.034	0.687	0.425	0.018
Post-2	63	1.741	1.315	6.522	2.201	1.441	0.929	0.001
Post-3	50	2.512	1.672	9.684	3.423	2.125	1.606	0.023

Panel L: Current Ratio

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	2.579	5.271	38.288	2.375	1.417	1.090	0.441
Pre-2	66	3.122	6.179	42.399	2.503	1.509	1.112	0.480
Pre-1	76	3.767	8.814	65.307	2.415	1.498	1.136	0.371
Post-1	76	2.846	5.706	39.081	1.978	1.471	1.144	0.095
Post-2	66	2.429	3.805	26.822	2.136	1.437	1.134	0.192
Post-3	51	1.871	2.040	14.095	1.968	1.441	1.124	0.281

Panel M: Operating Cash Flow Ratio

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.145	1.877	2.051	0.858	0.389	0.197	-8.953
Pre-2	66	0.151	1.871	3.419	0.807	0.472	0.165	-9.041
Pre-1	76	0.076	2.105	5.357	0.769	0.335	0.084	-11.481
Post-1	76	0.020	3.231	6.639	0.622	0.349	0.079	-24.738
Post-2	66	-0.030	3.501	2.998	0.803	0.428	0.152	-25.543
Post-3	51	0.268	1.539	2.428	0.850	0.389	0.152	-7.817

Panel N: Common Earnings Leverage (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.836	0.280	2.319	0.940	0.848	0.727	0.017
Pre-2	66	0.816	0.354	1.521	0.973	0.856	0.756	-1.553
Pre-1	76	0.845	0.287	1.821	0.975	0.878	0.773	-0.767
Post-1	76	1.102	1.592	14.409	1.000	0.851	0.770	0.347
Post-2	66	-0.499	21.576	88.566	1.003	0.839	0.745	-146.888
Post-3	51	0.770	1.455	2.353	1.047	0.852	0.731	-8.764

Panel O: Common Earnings Leverage (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.837	0.282	2.319	0.940	0.848	0.731	-0.041
Pre-2	66	0.807	0.413	1.521	0.973	0.856	0.756	-2.106
Pre-1	76	0.840	0.293	1.821	0.977	0.878	0.776	-0.767
Post-1	76	1.102	1.592	14.409	1.001	0.851	0.770	0.347
Post-2	66	-0.499	21.576	88.566	1.005	0.839	0.737	-146.888
Post-3	51	0.768	1.455	2.353	1.047	0.849	0.731	-8.764

Panel P: Capital Structure Leverage

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	2.092	0.681	4.065	2.500	2.091	1.604	0.992
Pre-2	66	2.011	0.660	3.901	2.401	1.984	1.585	0.992
Pre-1	76	2.196	1.590	13.443	2.384	1.914	1.512	0.964
Post-1	76	2.504	1.461	10.587	2.749	2.194	1.819	1.009
Post-2	66	2.474	1.461	10.979	2.735	2.126	1.838	1.018
Post-3	51	2.744	4.373	31.017	2.922	2.173	1.766	-7.529

Panel Q: Investing Cash Flows/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	-0.371	0.339	0.384	-0.129	-0.314	-0.556	-1.168
Pre-2	66	-0.261	0.283	0.368	-0.053	-0.227	-0.396	-1.085
Pre-1	76	-0.159	0.217	0.399	-0.031	-0.117	-0.251	-0.982
Post-1	76	-0.079	0.176	0.786	-0.016	-0.073	-0.124	-0.457
Post-2	66	-0.161	0.270	0.793	-0.034	-0.135	-0.289	-0.907
Post-3	51	-0.185	0.270	0.463	-0.015	-0.168	-0.271	-1.089

Panel R: Financing Cash Flows/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.227	0.463	1.820	0.393	0.042	-0.069	-0.331
Pre-2	66	0.204	0.360	1.382	0.358	0.092	-0.058	-0.196
Pre-1	76	0.119	0.254	0.992	0.206	0.051	-0.031	-0.307
Post-1	76	0.012	0.179	0.421	0.103	-0.002	-0.062	-0.901
Post-2	66	0.046	0.291	0.722	0.154	0.002	-0.096	-0.997
Post-3	51	0.016	0.331	1.257	0.124	-0.032	-0.179	-0.554

This table reports ratios of accounting performance and other financial characteristics. Sample firm ratios in the pre-merger period are calculated using a combination of target and acquiring firm financial statement data, explained in section 4.1.1. The method of calculating these ratios is set out in Table 4.1.1, and the method of cumulation in section 4.1.2.

Table A5.2.7 – Control Group One Cumulative Period Accounting Ratios*Panel A: HPR_{Cp}/Sales*

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	-0.042	0.993	0.426	0.203	0.122	0.054	-6.618
Pre-2	61	-0.675	5.969	4.529	0.217	0.126	0.045	-45.859
Pre-1	71	-1.948	16.435	4.963	0.249	0.129	0.061	-137.783
Post-1	72	-0.127	1.539	2.540	0.218	0.138	0.046	-10.492
Post-2	62	-0.640	3.687	1.953	0.193	0.131	0.051	-25.229
Post-3	48	-0.734	4.682	0.473	0.185	0.110	0.037	-31.906

Panel B: HPR_{Cp}/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.232	0.496	1.022	0.491	0.346	0.137	-1.499
Pre-2	66	0.076	0.489	0.653	0.296	0.231	0.005	-2.607
Pre-1	76	0.042	0.349	0.369	0.170	0.116	0.048	-2.461
Post-1	76	0.057	0.220	0.404	0.160	0.102	0.028	-1.257
Post-2	66	0.085	0.500	0.614	0.307	0.211	0.075	-2.788
Post-3	51	0.141	0.624	0.863	0.456	0.300	0.069	-3.168

Panel C: Operating Cash Flows/Sales

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	-0.119	1.596	0.432	0.193	0.111	0.039	-10.876
Pre-2	61	-0.281	2.571	2.407	0.228	0.120	0.058	-16.737
Pre-1	71	-0.914	7.539	2.670	0.305	0.145	0.058	-60.435
Post-1	72	-0.170	1.717	1.792	0.198	0.098	0.048	-13.293
Post-2	62	-0.423	3.053	0.981	0.204	0.096	0.045	-22.646
Post-3	48	-0.240	1.629	0.462	0.190	0.099	0.054	-8.691

Panel D: Operating Cash Flow/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.248	0.407	0.963	0.505	0.309	0.087	-1.292
Pre-2	66	0.139	0.312	0.667	0.307	0.193	0.055	-1.136
Pre-1	76	0.090	0.226	0.740	0.179	0.104	0.038	-1.080
Post-1	76	0.060	0.200	0.487	0.129	0.097	0.039	-1.211
Post-2	66	0.131	0.262	0.590	0.250	0.187	0.046	-0.882
Post-3	51	0.217	0.339	0.842	0.381	0.280	0.101	-1.059

Panel E: Return On Assets (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.030	0.427	0.507	0.230	0.183	0.034	-1.523
Pre-2	66	-0.048	0.455	0.376	0.172	0.128	-0.040	-2.614
Pre-1	76	-0.029	0.330	0.210	0.088	0.062	0.000	-2.467
Post-1	76	-0.007	0.199	0.224	0.079	0.049	-0.005	-1.270
Post-2	66	-0.046	0.496	0.341	0.153	0.094	-0.009	-3.153
Post-3	51	-0.049	0.609	0.383	0.226	0.139	-0.007	-3.565

Panel F: Return On Assets (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.030	0.423	0.507	0.230	0.180	0.034	-1.523
Pre-2	66	-0.046	0.452	0.376	0.171	0.120	-0.040	-2.614
Pre-1	76	-0.027	0.329	0.210	0.088	0.062	0.000	-2.467
Post-1	76	-0.007	0.199	0.224	0.079	0.049	-0.003	-1.270
Post-2	66	-0.045	0.496	0.341	0.153	0.094	-0.009	-3.153
Post-3	51	-0.048	0.610	0.383	0.226	0.139	-0.007	-3.565

Panel G: Return On Equity (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.013	0.908	1.542	0.416	0.268	0.026	-3.700
Pre-2	66	-0.052	0.706	0.862	0.287	0.179	-0.210	-2.729
Pre-1	76	-0.008	0.409	0.507	0.159	0.091	-0.028	-2.617
Post-1	76	-0.022	0.506	0.616	0.146	0.067	-0.046	-3.812
Post-2	66	0.123	0.725	4.586	0.307	0.129	0.000	-1.585
Post-3	51	0.146	0.870	4.368	0.459	0.167	0.015	-1.782

Panel H: Return On Equity (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.030	0.828	1.542	0.416	0.244	0.026	-2.812
Pre-2	66	-0.045	0.682	0.862	0.287	0.174	-0.210	-2.729
Pre-1	76	-0.001	0.394	0.507	0.162	0.091	-0.028	-2.617
Post-1	76	-0.023	0.508	0.616	0.146	0.067	-0.046	-3.812
Post-2	66	0.124	0.725	4.586	0.307	0.129	0.000	-1.585
Post-3	51	0.147	0.870	4.368	0.459	0.167	0.015	-1.782

Panel I: Profit Margin (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	-0.141	1.030	0.207	0.113	0.057	0.020	-6.950
Pre-2	61	-0.802	5.955	2.686	0.125	0.065	0.012	-45.980
Pre-1	71	-2.087	16.454	2.936	0.118	0.063	0.018	-138.087
Post-1	72	-0.251	1.570	1.323	0.123	0.050	0.011	-10.846
Post-2	62	-0.775	3.770	1.057	0.105	0.045	0.017	-25.620
Post-3	48	-0.844	4.740	0.280	0.085	0.038	0.009	-32.332

Panel J: Profit Margin (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	-0.142	1.029	0.205	0.113	0.057	0.020	-6.950
Pre-2	61	-0.803	5.955	2.686	0.125	0.065	0.012	-45.980
Pre-1	71	-2.087	16.454	2.936	0.118	0.063	0.018	-138.087
Post-1	72	-0.249	1.571	1.323	0.123	0.052	0.013	-10.846
Post-2	62	-0.773	3.771	1.057	0.114	0.047	0.017	-25.620
Post-3	48	-0.842	4.740	0.280	0.086	0.038	0.009	-32.332

Panel K: Asset Turnover

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	3.658	3.839	21.200	4.032	2.665	1.433	0.119
Pre-2	61	2.166	2.379	13.517	2.524	1.372	0.777	0.057
Pre-1	71	1.119	1.176	6.480	1.280	0.704	0.422	0.018
Post-1	72	0.977	0.887	4.201	1.145	0.687	0.363	0.020
Post-2	62	2.003	1.838	8.830	2.229	1.451	0.769	0.022
Post-3	48	3.148	2.856	13.890	3.580	2.157	1.458	0.042

Panel L: Current Ratio

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	2.918	5.511	34.435	2.013	1.500	1.018	0.470
Pre-2	66	3.645	7.346	42.225	2.487	1.518	0.973	0.172
Pre-1	76	3.846	10.033	70.727	2.346	1.606	0.986	0.069
Post-1	76	5.685	24.248	205.525	2.176	1.440	0.989	0.077
Post-2	66	4.427	13.065	77.039	2.107	1.280	0.938	0.065
Post-3	51	4.519	12.408	78.203	1.925	1.256	0.994	0.168

Panel M: Operating Cash Flow Ratio

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	-0.245	4.476	3.140	0.715	0.454	0.108	-29.565
Pre-2	66	-0.642	5.616	5.338	0.701	0.349	0.087	-38.179
Pre-1	76	-0.452	4.658	2.290	0.619	0.355	0.079	-33.910
Post-1	76	-0.053	2.763	8.302	0.614	0.234	0.028	-17.562
Post-2	66	0.209	1.834	9.176	0.765	0.268	0.073	-7.222
Post-3	51	0.493	1.433	9.174	0.798	0.357	0.098	-1.794

Panel N: Common Earnings Leverage (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.890	0.439	3.568	1.000	0.915	0.737	0.130
Pre-2	66	0.862	0.388	1.680	1.000	0.942	0.787	-1.625
Pre-1	76	0.930	0.382	3.781	1.000	0.932	0.752	0.303
Post-1	76	0.875	0.834	5.819	1.000	0.905	0.713	-3.319
Post-2	66	0.923	0.508	4.242	1.000	0.891	0.765	-0.001
Post-3	51	0.867	0.320	2.130	1.000	0.881	0.653	0.138

Panel O: Common Earnings Leverage (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.868	0.322	2.508	1.000	0.915	0.734	0.130
Pre-2	66	0.861	0.389	1.680	1.000	0.942	0.778	-1.625
Pre-1	76	0.932	0.382	3.781	1.000	0.932	0.752	0.303
Post-1	76	0.810	0.605	3.348	1.000	0.901	0.713	-3.319
Post-2	66	0.925	0.508	4.242	1.000	0.902	0.765	-0.001
Post-3	51	0.868	0.320	2.130	1.000	0.887	0.653	0.138

Panel P: Capital Structure Leverage

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	2.154	1.069	7.371	2.380	2.038	1.473	1.015
Pre-2	66	2.225	1.882	13.903	2.321	1.953	1.357	1.007
Pre-1	76	1.999	0.862	4.814	2.263	1.925	1.323	0.796
Post-1	76	2.160	0.984	7.185	2.595	2.019	1.478	1.005
Post-2	66	2.053	0.865	4.641	2.560	1.999	1.512	-1.398
Post-3	51	2.198	0.940	5.507	2.696	2.189	1.812	-1.179

Panel Q: Investing Cash Flows/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	-0.283	0.270	0.443	-0.086	-0.285	-0.455	-0.882
Pre-2	66	-0.222	0.227	0.366	-0.058	-0.194	-0.355	-0.974
Pre-1	76	-0.114	0.160	0.323	-0.025	-0.087	-0.191	-0.771
Post-1	76	-0.115	0.174	0.362	-0.024	-0.078	-0.172	-0.972
Post-2	66	-0.197	0.267	0.316	-0.053	-0.121	-0.277	-1.352
Post-3	51	-0.246	0.277	0.210	-0.071	-0.211	-0.367	-1.428

Panel R: Financing Cash Flows/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.193	0.533	2.240	0.281	0.032	-0.125	-0.442
Pre-2	66	0.166	0.419	1.773	0.249	0.046	-0.092	-0.453
Pre-1	76	0.085	0.295	1.404	0.108	0.003	-0.060	-0.361
Post-1	76	0.048	0.218	1.287	0.078	0.002	-0.029	-0.378
Post-2	66	0.091	0.407	1.930	0.076	0.010	-0.087	-0.759
Post-3	51	0.112	0.461	2.485	0.120	0.006	-0.098	-0.474

This table reports ratios of accounting performance and other financial characteristics. The method of calculating these ratios is set out in Table 4.1.1, and the method of cumulation in section 4.1.2.

Table A5.2.8 – Control Group Two Cumulative Period Accounting Ratios*Panel A: HPR_{CP}/Sales*

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	0.008	0.626	0.663	0.160	0.120	0.072	-3.384
Pre-2	61	0.095	0.501	1.032	0.240	0.117	0.072	-2.224
Pre-1	71	0.111	0.492	1.241	0.285	0.122	0.068	-2.504
Post-1	71	0.048	0.807	1.150	0.266	0.143	0.072	-5.975
Post-2	61	0.096	0.481	1.092	0.239	0.147	0.069	-2.772
Post-3	50	-0.049	0.735	0.576	0.195	0.099	0.034	-4.164

Panel B: HPR_{CP}/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.272	0.354	0.922	0.443	0.352	0.207	-0.793
Pre-2	66	0.187	0.310	1.063	0.304	0.228	0.102	-0.762
Pre-1	76	0.122	0.301	2.349	0.145	0.111	0.063	-0.299
Post-1	76	0.073	0.199	0.387	0.168	0.111	0.058	-1.101
Post-2	66	0.142	0.350	0.653	0.325	0.243	0.112	-1.306
Post-3	51	0.217	0.527	0.892	0.473	0.366	0.082	-1.700

Panel C: Operating Cash Flows/Sales

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	0.020	0.461	0.448	0.160	0.095	0.058	-2.086
Pre-2	61	0.037	0.490	0.947	0.171	0.100	0.057	-2.497
Pre-1	71	0.061	0.510	1.080	0.178	0.107	0.062	-2.561
Post-1	71	0.130	0.293	0.897	0.263	0.127	0.060	-0.950
Post-2	61	0.134	0.257	0.875	0.217	0.110	0.075	-0.886
Post-3	50	0.084	0.323	0.754	0.201	0.106	0.050	-1.467

Panel D: Operating Cash Flow/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.225	0.349	0.696	0.435	0.308	0.184	-0.975
Pre-2	66	0.144	0.243	0.654	0.274	0.187	0.093	-0.842
Pre-1	76	0.081	0.149	0.559	0.149	0.099	0.052	-0.413
Post-1	76	0.080	0.157	0.454	0.152	0.098	0.048	-0.647
Post-2	66	0.150	0.310	0.653	0.309	0.184	0.091	-0.978
Post-3	51	0.248	0.467	0.945	0.506	0.284	0.132	-1.790

Panel E: Return On Assets (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.067	0.295	0.515	0.217	0.150	0.053	-0.930
Pre-2	66	0.065	0.246	0.951	0.149	0.103	0.039	-0.772
Pre-1	76	0.060	0.273	2.187	0.078	0.054	0.009	-0.347
Post-1	76	-0.004	0.195	0.224	0.077	0.045	0.009	-1.285
Post-2	66	-0.015	0.328	0.414	0.145	0.091	0.004	-1.552
Post-3	51	-0.034	0.462	0.534	0.212	0.114	-0.068	-1.713

Panel F: Return On Assets (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.066	0.295	0.515	0.217	0.150	0.053	-0.930
Pre-2	66	0.065	0.246	0.951	0.147	0.103	0.039	-0.772
Pre-1	76	0.060	0.273	2.187	0.078	0.054	0.009	-0.347
Post-1	76	-0.005	0.195	0.224	0.075	0.045	0.009	-1.285
Post-2	66	-0.016	0.328	0.414	0.145	0.091	0.004	-1.552
Post-3	51	-0.036	0.462	0.488	0.212	0.114	-0.068	-1.713

Panel G: Return On Equity (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.106	0.518	1.542	0.361	0.218	-0.030	-2.042
Pre-2	66	0.057	0.361	0.678	0.241	0.137	0.028	-1.355
Pre-1	76	0.037	0.218	0.620	0.122	0.081	-0.003	-1.151
Post-1	76	0.029	0.491	3.323	0.130	0.067	-0.007	-1.968
Post-2	66	-0.033	0.707	2.745	0.251	0.115	-0.062	-3.129
Post-3	51	-0.146	0.957	0.863	0.399	0.165	-0.189	-4.357

Panel H: Return On Equity (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.105	0.518	1.542	0.359	0.218	-0.030	-2.042
Pre-2	66	0.056	0.360	0.678	0.241	0.137	0.028	-1.355
Pre-1	76	0.037	0.218	0.620	0.122	0.081	-0.003	-1.151
Post-1	76	0.028	0.490	3.323	0.130	0.065	-0.007	-1.968
Post-2	66	-0.035	0.707	2.745	0.251	0.115	-0.062	-3.129
Post-3	51	-0.149	0.958	0.863	0.399	0.165	-0.189	-4.357

Panel I: Profit Margin (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	-0.110	0.687	0.334	0.078	0.047	0.018	-3.803
Pre-2	61	-0.020	0.571	1.081	0.105	0.050	0.020	-2.761
Pre-1	71	-0.003	0.548	1.156	0.098	0.048	0.013	-2.957
Post-1	71	-0.071	0.851	1.094	0.118	0.044	0.022	-6.440
Post-2	61	-0.019	0.518	1.053	0.103	0.048	0.008	-3.106
Post-3	50	-0.158	0.744	0.360	0.085	0.035	-0.016	-4.308

Panel J: Profit Margin (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	-0.110	0.687	0.334	0.078	0.047	0.018	-3.803
Pre-2	61	-0.021	0.571	1.081	0.105	0.050	0.020	-2.761
Pre-1	71	-0.003	0.548	1.156	0.098	0.048	0.013	-2.957
Post-1	71	-0.073	0.851	1.094	0.114	0.044	0.022	-6.440
Post-2	61	-0.020	0.518	1.053	0.103	0.048	0.008	-3.106
Post-3	50	-0.159	0.744	0.329	0.085	0.035	-0.016	-4.308

Panel K: Asset Turnover

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	48	3.918	5.967	39.694	4.369	2.775	1.245	0.077
Pre-2	61	2.416	3.482	25.048	2.762	1.791	0.923	0.046
Pre-1	71	1.170	1.701	13.175	1.377	0.871	0.417	0.025
Post-1	71	1.201	2.358	19.842	1.236	0.870	0.421	0.021
Post-2	61	2.657	5.431	42.933	2.478	1.796	1.034	0.098
Post-3	50	4.241	9.426	68.079	4.086	2.408	1.482	0.350

Panel L: Current Ratio

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	2.582	3.660	22.274	2.265	1.639	1.256	0.470
Pre-2	66	4.315	12.092	87.851	2.692	1.573	1.113	0.290
Pre-1	76	5.401	19.102	159.167	2.778	1.534	1.202	0.150
Post-1	76	2.783	6.485	54.000	2.083	1.447	1.118	0.110
Post-2	66	3.417	13.061	106.676	1.876	1.395	1.105	0.264
Post-3	51	1.573	0.899	4.180	1.797	1.356	1.074	0.320

Panel M: Operating Cash Flow Ratio

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	-0.307	3.643	3.040	0.781	0.366	0.146	-22.181
Pre-2	66	-0.224	3.764	2.344	0.694	0.313	0.050	-28.667
Pre-1	76	-0.853	7.056	2.881	0.599	0.298	0.103	-48.138
Post-1	76	-0.743	8.665	2.509	0.595	0.309	0.094	-74.682
Post-2	66	-2.055	18.334	3.178	0.684	0.408	0.133	-148.226
Post-3	51	0.211	1.435	2.806	0.725	0.412	0.045	-6.247

Panel N: Common Earnings Leverage (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.755	0.637	1.347	0.979	0.885	0.745	-3.320
Pre-2	66	0.863	0.229	1.421	0.999	0.918	0.774	0.239
Pre-1	76	0.681	1.775	5.284	0.999	0.895	0.699	-13.624
Post-1	76	0.865	0.482	3.348	1.000	0.889	0.799	-0.934
Post-2	66	0.698	1.211	3.333	1.000	0.876	0.725	-7.675
Post-3	51	0.794	0.492	1.628	1.004	0.886	0.693	-0.595

Panel O: Common Earnings Leverage (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.754	0.637	1.347	0.979	0.885	0.745	-3.320
Pre-2	66	0.861	0.230	1.421	0.999	0.918	0.774	0.239
Pre-1	76	0.681	1.775	5.284	0.999	0.895	0.699	-13.624
Post-1	76	0.861	0.484	3.348	1.000	0.889	0.785	-0.934
Post-2	66	0.697	1.211	3.333	1.000	0.876	0.725	-7.675
Post-3	51	0.793	0.491	1.628	1.004	0.886	0.693	-0.595

Panel P: Capital Structure Leverage

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	1.966	0.650	3.747	2.228	1.964	1.488	1.022
Pre-2	66	1.847	0.740	3.807	2.109	1.928	1.266	-1.162
Pre-1	76	1.853	0.888	5.770	2.097	1.821	1.277	-0.558
Post-1	76	2.342	2.828	25.463	2.327	1.906	1.470	1.004
Post-2	66	2.169	1.093	8.110	2.349	1.967	1.605	-0.015
Post-3	51	2.188	0.738	3.962	2.660	2.068	1.762	-0.015

Panel Q: Investing Cash Flows/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	-0.329	0.303	0.106	-0.152	-0.267	-0.441	-1.376
Pre-2	66	-0.250	0.329	0.633	-0.083	-0.207	-0.359	-1.817
Pre-1	76	-0.137	0.216	0.614	-0.037	-0.098	-0.205	-1.137
Post-1	76	-0.125	0.154	0.043	-0.021	-0.076	-0.180	-0.776
Post-2	66	-0.236	0.246	0.207	-0.061	-0.188	-0.287	-1.092
Post-3	51	-0.285	0.380	1.026	-0.091	-0.260	-0.418	-1.828

Panel R: Financing Cash Flows/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.216	0.432	1.629	0.283	0.098	-0.033	-0.298
Pre-2	66	0.231	0.473	2.386	0.351	0.078	-0.021	-0.230
Pre-1	76	0.110	0.247	1.526	0.172	0.013	-0.019	-0.167
Post-1	76	0.069	0.243	1.520	0.102	0.017	-0.038	-0.370
Post-2	66	0.141	0.335	1.376	0.195	0.041	-0.035	-0.404
Post-3	51	0.153	0.438	1.660	0.330	0.053	-0.107	-0.556

This table reports ratios of accounting performance and other financial characteristics. The method of calculating these ratios is set out in Table 4.1.1, and the method of cumulation in section 4.1.2.

Table A5.2.9 – Long-Run BHARs for Acquiring, Target and Control Firms*Panel A: Acquiring Firm*

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	64	53.394	138.122	686.158	63.954	6.294	-24.959	-83.881
Pre-2	71	61.186	165.212	803.534	64.416	7.418	-19.876	-84.607
Pre-1	77	8.461	42.897	138.904	27.951	-0.327	-18.133	-76.469
Post-1	80	-9.330	48.062	288.835	11.897	-10.481	-40.722	-82.472
Post-2	71	-11.639	56.936	259.649	14.602	-19.336	-45.552	-93.505
Post-3	67	-14.928	74.279	311.348	7.385	-30.459	-60.541	-95.966

Panel B: Target Firm

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	63	32.452	155.275	1031.088	63.097	-4.473	-47.101	-91.808
Pre-2	70	10.327	91.786	483.731	28.316	-16.086	-39.189	-94.245
Pre-1	75	-1.109	53.189	241.356	17.750	-14.182	-32.560	-74.246

Panel C: Control Firm One

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	68	23.885	89.317	363.608	39.442	-5.280	-27.610	-87.206
Pre-2	74	10.923	56.253	254.128	30.678	1.381	-28.751	-86.820
Pre-1	78	6.648	50.675	240.439	25.989	-1.830	-23.014	-80.101
Post-1	79	-9.097	33.164	95.884	8.776	-7.784	-29.002	-94.794
Post-2	79	-10.086	52.261	180.248	15.719	-18.195	-46.984	-96.021
Post-3	76	-6.692	83.910	441.222	21.281	-17.461	-65.085	-98.670

Panel D: Control Firm Two

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	67	1.510	72.767	278.491	45.209	-20.226	-48.797	-93.763
Pre-2	77	-1.947	54.484	219.266	20.793	-11.722	-33.755	-94.091
Pre-1	80	5.276	97.811	766.396	11.018	-12.046	-26.846	-84.945
Post-1	80	3.696	66.253	315.775	17.812	-5.124	-32.608	-93.784
Post-2	80	6.402	109.386	785.442	31.691	-11.819	-47.490	-99.513
Post-3	80	10.136	148.364	1155.273	29.554	-12.647	-60.993	-99.355

This table reports the long-run buy and hold abnormal returns (BHARs) before and after a merger. The method of calculating BHARs is set out in section 4.1.3. The pre-merger windows are calculated from 6 months before event date, and the post-merger windows from 6 months after. Pre-1 represents the return from [-18, -6] months; Pre-2 from [-30, -6] months; and Pre-3 from [-42, -6] months. Likewise Post-1 is from [+6, +18] months; Post-2 from [+6, +30] months; and Post-3 from [+6, +42] months. The event date for control firms is the same as for the sample firms to which they are matched. BHARs are reported as a percentage.

Table A6.1.1 – Sample Firm Individual Year Accounting Ratios Adjusted Against Control Group Two

Panel A: HPR_{CP}/Sales

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	0.362	2.026	13.692	0.129	0.007	-0.093	-1.915
-2	70	0.050	2.717	10.756	0.173	0.011	-0.062	-19.202
-1	74	0.135	0.708	3.470	0.162	0.012	-0.052	-1.326
0	73	-0.038	1.171	1.866	0.113	0.020	-0.066	-9.127
1	70	-0.001	1.503	2.895	0.126	0.017	-0.080	-11.263
2	62	0.167	1.148	6.951	0.127	0.026	-0.092	-1.557
3	62	0.185	2.121	15.556	0.120	0.022	-0.203	-3.633

Panel B: HPR_{CP}/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.029	0.360	1.813	0.065	0.002	-0.090	-0.651
-2	77	0.042	0.203	0.960	0.137	0.029	-0.054	-0.604
-1	80	-0.005	0.323	0.639	0.094	0.012	-0.051	-2.119
0	81	-0.029	0.254	0.465	0.031	-0.018	-0.067	-1.598
1	77	0.003	0.235	1.346	0.067	-0.007	-0.064	-0.656
2	69	-0.024	0.243	0.722	0.073	0.006	-0.061	-1.024
3	66	-0.064	0.265	1.237	0.020	-0.042	-0.208	-0.777

Panel C: Operating Cash Flows/Sales

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	0.226	1.009	5.204	0.105	0.013	-0.069	-1.289
-2	70	0.425	1.960	15.297	0.139	0.033	-0.049	-0.692
-1	74	0.203	0.802	5.112	0.104	0.033	-0.097	-0.868
0	73	0.070	0.597	2.235	0.088	0.027	-0.041	-3.267
1	70	-0.067	1.222	2.936	0.090	0.017	-0.076	-7.958
2	62	0.129	0.512	2.919	0.104	0.031	-0.084	-0.841
3	62	0.041	0.862	4.249	0.156	0.012	-0.099	-4.700

Panel D: Operating Cash Flow/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.001	0.188	0.855	0.059	-0.008	-0.080	-0.522
-2	77	0.019	0.157	0.712	0.085	0.016	-0.039	-0.459
-1	80	0.008	0.179	0.544	0.073	0.008	-0.065	-0.638
0	81	-0.004	0.155	0.576	0.049	-0.011	-0.057	-0.425
1	77	0.005	0.164	0.921	0.056	-0.007	-0.081	-0.499
2	69	0.040	0.195	0.728	0.071	0.019	-0.080	-0.510
3	66	0.005	0.166	0.593	0.078	-0.020	-0.080	-0.347

Panel E: Return On Assets (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.030	0.341	1.787	0.057	-0.008	-0.076	-0.686
-2	77	0.041	0.178	0.886	0.094	0.014	-0.035	-0.439
-1	80	-0.016	0.299	0.641	0.055	0.001	-0.027	-2.064
0	81	-0.011	0.246	0.531	0.043	-0.006	-0.057	-1.598
1	77	-0.002	0.226	1.395	0.050	-0.014	-0.060	-0.531
2	69	-0.028	0.209	0.484	0.069	-0.003	-0.055	-0.911
3	66	-0.063	0.221	0.713	0.014	-0.029	-0.167	-0.795

Panel F: Return On Assets (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.031	0.341	1.787	0.057	-0.009	-0.064	-0.686
-2	77	0.043	0.178	0.886	0.094	0.014	-0.035	-0.439
-1	80	-0.016	0.300	0.641	0.055	0.001	-0.029	-2.064
0	81	-0.011	0.245	0.531	0.041	-0.006	-0.057	-1.598
1	77	-0.005	0.225	1.395	0.050	-0.014	-0.060	-0.531
2	69	-0.031	0.214	0.484	0.069	-0.003	-0.057	-0.911
3	66	-0.064	0.221	0.713	0.014	-0.029	-0.167	-0.795

Panel G: Return On Equity (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.047	0.703	4.502	0.083	0.023	-0.128	-1.774
-2	77	0.093	0.326	1.966	0.189	0.048	-0.077	-0.452
-1	80	0.031	0.320	1.340	0.106	0.007	-0.060	-1.292
0	81	0.009	0.397	1.189	0.120	0.010	-0.088	-1.953
1	77	-0.054	0.570	2.287	0.110	-0.023	-0.100	-3.229
2	69	-0.211	1.278	1.341	0.143	-0.020	-0.112	-7.439
3	66	0.523	5.129	41.241	0.028	-0.079	-0.227	-1.816

Panel H: Return On Equity (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.049	0.703	4.502	0.083	0.023	-0.103	-1.789
-2	77	0.095	0.326	1.966	0.189	0.050	-0.074	-0.452
-1	80	0.031	0.320	1.340	0.110	0.007	-0.060	-1.292
0	81	0.007	0.397	1.189	0.113	0.010	-0.075	-1.953
1	77	-0.058	0.569	2.287	0.107	-0.023	-0.100	-3.229
2	69	-0.217	1.282	1.341	0.143	-0.020	-0.125	-7.439
3	66	0.522	5.129	41.241	0.028	-0.079	-0.227	-1.816

Panel I: Profit Margin (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	0.385	2.011	13.623	0.062	0.000	-0.082	-1.229
-2	70	0.075	2.744	10.955	0.154	0.006	-0.046	-19.047
-1	74	0.109	0.661	3.210	0.087	0.008	-0.039	-1.347
0	73	-0.050	1.220	2.075	0.092	0.025	-0.046	-9.531
1	70	-0.030	1.486	3.068	0.075	0.010	-0.068	-11.323
2	62	0.098	1.011	6.955	0.094	0.006	-0.052	-1.820
3	62	0.139	2.107	15.427	0.101	-0.009	-0.189	-3.675

Panel J: Profit Margin (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	0.388	2.010	13.623	0.112	0.000	-0.082	-1.229
-2	70	0.077	2.744	10.955	0.144	0.009	-0.043	-19.047
-1	74	0.128	0.734	3.484	0.087	0.009	-0.041	-1.347
0	73	-0.052	1.220	2.075	0.093	0.019	-0.046	-9.531
1	70	-0.070	1.480	3.068	0.075	0.007	-0.072	-11.323
2	62	0.095	1.012	6.955	0.094	0.006	-0.052	-1.820
3	62	0.136	2.107	15.427	0.101	-0.010	-0.189	-3.675

Panel K: Asset Turnover

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	59	-0.333	1.657	1.818	0.361	0.026	-0.585	-10.847
-2	70	-0.189	1.570	2.456	0.363	0.027	-0.408	-10.751
-1	74	-0.253	1.602	2.182	0.216	-0.088	-0.365	-11.833
0	73	-0.308	1.150	3.045	0.136	-0.157	-0.491	-6.229
1	70	-0.314	2.403	2.547	0.165	-0.064	-0.374	-18.996
2	62	-0.370	2.532	1.798	0.177	0.010	-0.353	-19.208
3	62	-0.455	2.803	2.109	0.175	-0.032	-0.473	-21.317

Panel L: Current Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-1.333	6.229	20.737	0.394	-0.228	-0.859	-29.309
-2	77	-0.888	8.510	43.274	0.599	-0.068	-1.025	-42.452
-1	80	-1.584	12.803	38.626	0.468	-0.041	-0.948	-93.860
0	81	-2.676	18.782	32.165	0.581	-0.108	-0.761	-143.748
1	77	-0.086	4.925	21.547	0.644	-0.013	-0.702	-24.631
2	69	-1.672	32.893	104.580	0.733	0.258	-0.575	-247.272
3	66	-0.633	8.788	24.653	0.560	0.149	-0.614	-63.911

Panel M: Operating Cash Flow Ratio

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.801	5.256	40.567	0.443	0.092	-0.337	-4.280
-2	77	0.216	1.941	8.619	0.448	0.110	-0.208	-8.729
-1	80	0.870	5.945	44.482	0.346	-0.003	-0.353	-8.348
0	81	1.202	8.284	73.618	0.392	0.058	-0.302	-2.065
1	77	0.794	5.832	49.944	0.402	0.061	-0.276	-3.255
2	69	1.862	13.522	111.936	0.525	0.090	-0.219	-3.342
3	66	1.698	13.141	106.459	0.514	-0.017	-0.354	-3.073

Panel N: Common Earnings Leverage (Profit Before Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.252	2.279	2.673	0.129	-0.040	-0.184	-17.656
-2	77	-0.223	1.243	2.029	0.062	-0.021	-0.161	-8.854
-1	80	0.089	1.907	14.507	0.094	-0.021	-0.117	-6.050
0	81	0.123	0.994	7.803	0.073	-0.021	-0.130	-1.247
1	77	0.235	1.689	13.916	0.243	-0.004	-0.144	-1.969
2	69	0.340	1.954	8.035	0.114	-0.018	-0.193	-3.119
3	66	-0.348	1.865	2.720	0.133	-0.025	-0.238	-11.836

Panel O: Common Earnings Leverage (Profit After Extraordinary Items)

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.296	2.650	2.673	0.129	-0.040	-0.184	-20.700
-2	77	-0.221	1.241	2.029	0.062	-0.019	-0.149	-8.829
-1	80	0.084	1.908	14.507	0.109	-0.021	-0.117	-6.050
0	81	0.115	0.990	7.803	0.073	-0.021	-0.130	-1.247
1	77	0.238	1.688	13.916	0.243	-0.004	-0.144	-1.969
2	69	0.335	1.957	8.035	0.114	-0.018	-0.210	-3.119
3	66	-0.274	1.771	2.720	0.133	-0.025	-0.221	-11.836

Panel P: Capital Structure Leverage

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	0.698	5.009	39.291	0.460	0.092	-0.266	-2.697
-2	77	0.399	2.030	15.716	0.513	0.214	-0.055	-4.027
-1	80	0.365	1.504	11.222	0.620	0.109	-0.261	-2.004
0	81	0.386	1.021	5.697	0.809	0.126	-0.166	-1.354
1	77	0.179	2.989	8.797	0.769	0.159	-0.164	-22.833
2	69	0.341	1.453	7.787	0.780	0.027	-0.286	-2.788
3	66	-0.949	6.259	3.543	0.453	-0.078	-0.564	-49.342

Panel Q: Investing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.004	0.295	1.302	0.088	0.013	-0.093	-0.737
-2	77	-0.029	0.256	0.672	0.123	0.005	-0.120	-1.161
-1	80	-0.015	0.307	1.266	0.093	0.011	-0.109	-0.981
0	81	-0.085	0.246	0.534	0.041	-0.055	-0.190	-1.039
1	77	0.044	0.193	0.805	0.170	0.004	-0.087	-0.330
2	69	0.036	0.199	0.718	0.118	0.002	-0.084	-0.542
3	66	-0.006	0.279	0.472	0.127	0.026	-0.050	-1.295

Panel R: Financing Cash Flows/Assets

Year	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
-3	64	-0.014	0.383	1.111	0.102	-0.022	-0.087	-1.455
-2	77	-0.035	0.343	0.913	0.071	-0.001	-0.116	-1.539
-1	80	0.010	0.395	1.009	0.126	0.026	-0.115	-1.626
0	81	0.048	0.268	0.549	0.187	0.040	-0.077	-1.426
1	77	-0.057	0.278	0.651	0.075	-0.031	-0.177	-1.363
2	69	-0.052	0.249	0.657	0.070	-0.008	-0.175	-0.735
3	66	-0.047	0.300	1.293	0.070	-0.036	-0.153	-0.903

This table reports ratios of accounting performance and other financial characteristics. Sample firm ratios in the pre-merger period are calculated using a combination of target and acquiring firm financial statement data, explained in section 4.1.1. The method of calculating these ratios is set out in Table 4.1.1. Adjusted ratios are calculated by taking the ratio of a sample firm and subtracting from it the corresponding ratio of its matched firm in control group two.

Table A6.2.1 – Sample Firm Cumulative Period Accounting Ratios Adjusted Against Control Group Two

Panel A: HPR_{CP}/Sales

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	47	0.203	0.708	3.899	0.120	0.021	-0.016	-0.837
Pre-2	60	0.161	0.652	2.705	0.115	0.008	-0.058	-0.927
Pre-1	70	0.136	0.693	3.470	0.152	0.011	-0.052	-1.326
Post-1	69	-0.036	1.484	2.895	0.126	0.016	-0.080	-11.263
Post-2	60	-0.225	2.199	2.358	0.089	0.021	-0.091	-16.593
Post-3	49	-0.762	4.136	4.026	0.075	0.036	-0.093	-21.134

Panel B: HPR_{CP}/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.024	0.421	1.682	0.093	-0.016	-0.156	-1.161
Pre-2	66	0.033	0.335	1.093	0.103	0.021	-0.108	-1.113
Pre-1	76	-0.006	0.318	0.639	0.086	0.009	-0.051	-2.119
Post-3	76	0.002	0.237	1.346	0.064	-0.008	-0.071	-0.656
Post-2	66	-0.023	0.458	1.737	0.144	-0.014	-0.149	-2.216
Post-1	51	-0.117	0.609	1.575	0.096	-0.079	-0.216	-2.257

Panel C: Operating Cash Flows/Sales

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	47	0.155	0.509	2.396	0.103	0.028	-0.029	-0.272
Pre-2	60	0.166	0.549	2.613	0.101	0.023	-0.063	-0.281
Pre-1	70	0.217	0.806	5.112	0.104	0.033	-0.078	-0.638
Post-1	69	-0.083	1.223	2.936	0.078	0.017	-0.076	-7.958
Post-2	60	-0.129	1.537	1.780	0.072	0.018	-0.083	-11.516
Post-3	49	-0.501	2.639	1.078	0.081	0.020	-0.085	-13.614

Panel D: Operating Cash Flow/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.034	0.347	1.424	0.157	-0.015	-0.179	-0.423
Pre-2	66	0.036	0.248	0.965	0.132	0.024	-0.126	-0.434
Pre-1	76	0.018	0.153	0.544	0.073	0.011	-0.062	-0.362
Post-1	76	0.003	0.165	0.921	0.056	-0.007	-0.083	-0.499
Post-2	66	0.027	0.311	1.521	0.104	0.014	-0.117	-1.028
Post-3	51	0.001	0.409	1.676	0.151	0.010	-0.218	-1.348

Panel E: Return On Assets (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.025	0.362	1.225	0.097	-0.001	-0.082	-1.113
Pre-2	66	0.016	0.287	1.094	0.092	0.003	-0.067	-0.986
Pre-1	76	-0.019	0.298	0.641	0.054	0.000	-0.027	-2.064
Post-1	76	0.005	0.219	1.395	0.050	-0.011	-0.056	-0.514
Post-2	66	-0.027	0.408	1.679	0.066	0.008	-0.112	-2.052
Post-3	51	-0.097	0.520	1.286	0.072	-0.016	-0.195	-2.051

Panel F: Return On Assets (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.026	0.361	1.225	0.097	0.004	-0.082	-1.113
Pre-2	66	0.017	0.288	1.094	0.092	0.009	-0.073	-0.986
Pre-1	76	-0.019	0.299	0.641	0.054	0.000	-0.029	-2.064
Post-1	76	0.002	0.218	1.395	0.050	-0.014	-0.056	-0.514
Post-2	66	-0.033	0.409	1.679	0.065	0.006	-0.112	-2.052
Post-3	51	-0.096	0.519	1.286	0.072	-0.016	-0.195	-2.051

Panel G: Return On Equity (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.088	0.641	2.608	0.206	0.011	-0.200	-1.355
Pre-2	66	0.099	0.440	1.748	0.212	0.029	-0.117	-1.108
Pre-1	76	0.036	0.298	1.340	0.104	0.007	-0.060	-1.292
Post-1	76	-0.034	0.547	2.287	0.110	-0.019	-0.097	-3.229
Post-2	66	-0.179	1.405	3.073	0.293	-0.014	-0.147	-8.002
Post-3	51	-0.353	4.288	9.764	0.260	-0.059	-0.378	-27.945

Panel H: Return On Equity (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.090	0.639	2.608	0.206	0.044	-0.200	-1.355
Pre-2	66	0.100	0.440	1.748	0.212	0.041	-0.117	-1.108
Pre-1	76	0.036	0.298	1.340	0.107	0.007	-0.060	-1.292
Post-1	76	-0.038	0.545	2.287	0.109	-0.019	-0.097	-3.229
Post-2	66	-0.189	1.415	3.073	0.252	-0.014	-0.186	-8.002
Post-3	51	-0.352	4.288	9.764	0.260	-0.059	-0.378	-27.945

Panel I: Profit Margin (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	47	0.205	0.744	4.046	0.066	0.003	-0.024	-0.695
Pre-2	60	0.151	0.657	2.847	0.053	0.000	-0.042	-0.847
Pre-1	70	0.112	0.644	3.210	0.087	0.007	-0.039	-1.347
Post-1	69	-0.057	1.480	3.068	0.075	0.009	-0.068	-11.323
Post-2	60	-0.264	2.201	1.544	0.074	0.003	-0.054	-16.784
Post-3	49	-1.028	5.426	3.851	0.047	-0.002	-0.066	-32.482

Panel J: Profit Margin (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	47	0.205	0.744	4.046	0.066	0.003	-0.024	-0.695
Pre-2	60	0.163	0.680	2.847	0.053	0.003	-0.040	-0.847
Pre-1	70	0.132	0.723	3.484	0.087	0.008	-0.041	-1.347
Post-1	69	-0.098	1.472	3.068	0.068	0.004	-0.072	-11.323
Post-2	60	-0.288	2.196	1.544	0.072	0.002	-0.062	-16.784
Post-3	49	-1.027	5.426	3.851	0.047	-0.003	-0.066	-32.482

Panel K: Asset Turnover

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	47	-1.131	6.060	5.360	0.910	0.008	-1.237	-36.683
Pre-2	60	-0.416	3.511	4.445	0.528	0.034	-0.658	-22.904
Pre-1	70	-0.245	1.644	2.182	0.241	-0.043	-0.300	-11.833
Post-1	69	-0.331	2.416	2.547	0.156	-0.078	-0.374	-18.996
Post-2	60	-0.887	5.468	3.443	0.338	-0.292	-0.715	-41.159
Post-3	49	-1.746	9.494	5.989	0.339	-0.513	-1.034	-65.252

Panel L: Current Ratio

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	-0.003	5.951	36.640	0.438	-0.106	-0.977	-14.489
Pre-2	66	-1.193	10.404	41.064	0.571	-0.035	-0.948	-59.068
Pre-1	76	-1.635	13.134	38.626	0.468	-0.041	-0.826	-93.860
Post-1	76	0.063	4.780	21.547	0.670	-0.007	-0.681	-24.631
Post-2	66	-0.988	10.237	10.008	0.686	0.119	-0.531	-79.853
Post-3	51	0.298	2.295	13.440	0.605	0.351	-0.647	-2.980

Panel M: Operating Cash Flow Ratio

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.452	3.204	17.661	0.419	0.063	-0.243	-8.999
Pre-2	66	0.375	3.453	23.714	0.452	0.127	-0.322	-9.092
Pre-1	76	0.930	6.084	44.482	0.346	0.018	-0.322	-8.348
Post-1	76	0.763	5.864	49.944	0.366	0.054	-0.292	-3.255
Post-2	66	2.025	15.119	122.684	0.635	0.164	-0.305	-4.134
Post-3	51	0.056	1.157	3.663	0.597	0.115	-0.333	-4.322

Panel N: Common Earnings Leverage (Profit Before Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.081	0.696	4.320	0.145	-0.037	-0.160	-0.986
Pre-2	66	-0.048	0.405	0.735	0.065	-0.028	-0.142	-2.557
Pre-1	76	0.164	1.853	14.507	0.094	-0.021	-0.105	-6.050
Post-1	76	0.238	1.700	13.916	0.243	-0.005	-0.167	-1.969
Post-2	66	-1.197	21.784	87.714	0.302	-0.003	-0.144	-149.289
Post-3	51	-0.024	1.622	2.611	0.225	-0.001	-0.193	-9.670

Panel O: Common Earnings Leverage (Profit After Extraordinary Items)

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.083	0.701	4.320	0.145	-0.037	-0.160	-1.044
Pre-2	66	-0.055	0.459	0.735	0.072	-0.028	-0.151	-3.110
Pre-1	76	0.159	1.854	14.507	0.118	-0.021	-0.105	-6.050
Post-1	76	0.241	1.699	13.916	0.243	-0.005	-0.167	-1.969
Post-2	66	-1.197	21.784	87.714	0.302	-0.003	-0.147	-149.289
Post-3	51	-0.025	1.621	2.611	0.225	-0.001	-0.193	-9.662

Panel P: Capital Structure Leverage

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.126	0.797	2.174	0.503	0.077	-0.221	-1.770
Pre-2	66	0.165	0.806	2.781	0.507	0.042	-0.236	-1.731
Pre-1	76	0.343	1.538	11.222	0.511	0.075	-0.283	-2.004
Post-1	76	0.162	3.006	8.797	0.760	0.137	-0.167	-22.833
Post-2	66	0.305	1.691	8.627	0.770	0.045	-0.406	-6.159
Post-3	51	0.556	4.353	28.872	0.468	-0.041	-0.335	-9.199

Panel Q: Investing Cash Flows/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	-0.041	0.438	1.145	0.238	0.044	-0.275	-1.129
Pre-2	66	-0.011	0.461	1.845	0.211	0.049	-0.162	-1.180
Pre-1	76	-0.022	0.312	1.266	0.088	0.007	-0.117	-0.981
Post-1	76	0.046	0.194	0.805	0.178	0.004	-0.084	-0.330
Post-2	66	0.074	0.292	0.878	0.207	0.040	-0.107	-0.708
Post-3	51	0.100	0.401	1.260	0.316	0.077	-0.073	-1.225

Panel R: Financing Cash Flows/Assets

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	51	0.011	0.607	1.796	0.316	0.004	-0.242	-1.960
Pre-2	66	-0.027	0.554	1.353	0.158	0.032	-0.189	-1.732
Pre-1	76	0.009	0.360	1.008	0.104	0.021	-0.115	-1.626
Post-1	76	-0.057	0.280	0.651	0.076	-0.025	-0.180	-1.363
Post-2	66	-0.095	0.390	0.788	0.150	-0.066	-0.216	-1.300
Post-3	51	-0.136	0.484	1.033	0.115	-0.133	-0.374	-1.641

This table reports ratios of accounting performance and other financial characteristics, cumulated over periods of one, two and three years before and after the merger. Sample firm ratios in the pre-merger period are calculated using a combination of target and acquiring firm financial statement data and using a process which cumulates ratios over multiple periods, which are explained in sections 4.1.1 and 4.1.2. The method of calculating these ratios is set out in Table 4.1.1. Adjusted ratios are calculated by taking the ratio of a sample firm and subtracting from it the corresponding ratio of its matched firm in control group two.

Table A6.2.2 – Long-Run Sample Firm BHARs Adjusted Against Control Group Two

Period	n.	Mean	Std. Dev.	Max.	75th %	Median	25th %	Min.
Pre-3	53	58.073	146.674	703.487	82.006	26.456	-25.760	-185.133
Pre-2	68	67.349	154.833	585.645	96.267	12.428	-24.132	-155.247
Pre-1	76	2.038	102.831	165.101	37.883	8.380	-12.268	-761.968
Post-1	79	-13.420	63.789	104.199	19.721	-11.851	-31.581	-369.934
Post-2	70	-21.610	102.323	109.704	18.431	-13.017	-46.201	-730.129
Post-3	66	-33.411	160.688	375.659	8.412	-17.030	-55.583	-1093.752

This table reports the long-run buy and hold abnormal returns (BHARs) before and after a merger. The method of calculating BHARs is set out in section 4.1.3. Adjusted BHARs are calculated by taking the BHAR of a sample firm over a period and subtracting from it the BHAR over a corresponding period of its matched firm in control group two. The pre-merger windows are calculated from 6 months before event date, and the post-merger windows from 6 months after. Pre-1 represents the return from [-18, -6] months; Pre-2 from [-30, -6] months; and Pre-3 from [-42, -6] months. Likewise Post-1 is from [+6, +18] months; Post-2 from [+6, +30] months; and Post-3 from [+6, +42] months. BHARs are reported as a percentage.

Table A6.3.1 – Healy et al. (1992) Type Regressions for Sample Firms for One Year Pre- and Post-Merger Adjusted Against Control Group Two

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel A: IAOP_{post} = α + βIAOP_{pre} + ε</i>									
HPR _{CF} /Sales	69	-0.0422 (-0.27)	0.0461 (0.18)	–	–	–	0.03	0.8600	-0.0145
HPR _{CF} /Assets	76	0.0016 (0.06)	0.1407 (1.07)	–	–	–	2.93	0.0915	0.0276
OCF/Sales	69	-0.086 (-0.64)	0.205 (0.18)	–	–	–	0.04	0.8435	-0.0143
OCF/Assets	76	-0.0229 (-1.59)	0.1624 (2.26)**	–	–	–	26.89	<.0001	0.2758
ROA (BE)	76	0.0081 (0.3)	0.0915 (0.69)	–	–	–	1.12	0.2935	0.0018
ROA (AE)	76	0.0049 (0.18)	0.0932 (0.7)	–	–	–	1.18	0.2808	0.0027
ROE (BE)	76	-0.0163 (-0.36)	-0.3989 (-0.57)	–	–	–	3.22	0.0774	0.0316
ROE (AE)	76	-0.0208 (-0.46)	-0.3915 (-0.56)	–	–	–	3.13	0.0816	0.0303
PM (BE)	69	-0.0736 (-0.48)	0.1491 (0.51)	–	–	–	0.29	0.5933	-0.0106
PM (AE)	69	-0.1206 (-0.78)	0.1748 (0.78)	–	–	–	0.51	0.4795	-0.0073
BHAR	76	-10.9743 (-1.14)	0.1207 (0.91)	–	–	–	0.29	0.5944	-0.0172

Panel B: IAOP_{post} = α + βIAOP_{pre} + γCASH + ε

HPR _{CF} /Sales	69	-0.2584 (-0.58)	0.0611 (0.26)	0.336 (0.72)	–	–	0.42	0.6618	-0.0175
HPR _{CF} /Assets	76	-0.0481 (-1.25)	0.157 (1.18)	0.0785 (1.4)	–	–	2.52	0.0884	0.0427
OCF/Sales	69	-0.4497 (-1.23)	0.112 (0.1)	0.5723 (1.48)	–	–	1.80	0.1727	0.0231
OCF/Assets	76	-0.0343 (-1.09)	0.1611 (2.25)**	0.0181 (0.48)	–	–	13.42	<.0001	0.2676
ROA (BE)	76	-0.0556 (-1.80)*	0.1122 (0.85)	0.1006 (1.98)*	–	–	2.42	0.0971	0.04
ROA (AE)	76	-0.0536 (-1.74)*	0.1131 (0.84)	0.0925 (1.81)*	–	–	2.17	0.1226	0.0332
ROE (BE)	76	-0.0546 (-0.87)	-0.3979 (-0.56)	0.06 (0.53)	–	–	1.69	0.1930	0.0198
ROE (AE)	76	-0.0502 (-0.79)	-0.3901 (-0.55)	0.0461 (0.4)	–	–	1.60	0.2095	0.0174
PM (BE)	69	-0.3253 (-0.73)	0.1601 (0.6)	0.3929 (0.84)	–	–	0.70	0.5000	-0.0089
PM (AE)	69	-0.3351 (-0.75)	0.1906 (0.95)	0.333 (0.72)	–	–	0.65	0.5235	-0.0103
BHAR	76	-19.9116 (-0.86)	0.1204 (0.94)	14.7907 (0.63)	–	–	0.40	0.6700	-0.0292

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel C: IAOP_{post} = α + βIAOP_{pre} + δINDUSTRY + ε</i>									
HPR _{CF} /Sales	69	0.4658 (1.55)	0.1038 (0.43)	–	-0.6133 (-1.80)*	–	0.78	0.4648	-0.0067
HPR _{CF} /Assets	76	0.009 (0.17)	0.1433 (1.07)	–	-0.0087 (-0.17)	–	1.45	0.2418	0.0131
OCF/Sales	69	0.1591 (0.61)	0.1813 (0.16)	–	-0.2912 (-0.92)	–	0.28	0.7598	-0.0218
OCF/Assets	76	-0.0757 (-1.61)	0.1643 (2.36)**	–	0.0625 (1.22)	–	14.51	<.0001	0.2844
ROA (BE)	76	0.0123 (0.23)	0.093 (0.68)	–	-0.0049 (-0.09)	–	0.55	0.5770	-0.0133
ROA (AE)	76	-0.0141 (-0.29)	0.0863 (0.63)	–	0.0224 (0.45)	–	0.63	0.5349	-0.011
ROE (BE)	76	-0.1865 (-0.96)	-0.3652 (-0.55)	–	0.2011 (0.92)	–	2.25	0.1135	0.0354
ROE (AE)	76	-0.2222 (-1.16)	-0.3511 (-0.54)	–	0.238 (1.11)	–	2.48	0.0916	0.0417
PM (BE)	69	0.4499 (1.6)	0.1933 (0.68)	–	-0.6287 (-1.89)*	–	0.97	0.3857	-0.001
PM (AE)	69	0.1827 (0.64)	0.1973 (0.88)	–	-0.3644 (-1.07)	–	0.53	0.5933	-0.0141
BHAR	76	-3.601 (-0.28)	0.108 (0.73)	–	-8.4781 (-0.50)	–	0.19	0.8295	-0.0402

Panel D: IAOP_{post} = α + βIAOP_{pre} + λFRIENDLY + ε

HPR _{CF} /Sales	69	-0.2237 (-0.67)	0.0441 (0.17)	–	–	0.3485 (0.95)	0.48	0.6191	-0.0154
HPR _{CF} /Assets	76	0.0274 (0.52)	0.1465 (1.12)	–	–	-0.0492 (-0.86)	1.9	0.158	0.0257
OCF/Sales	69	-0.0867 (-0.39)	0.2062 (0.2)	–	–	0.0013 (0.01)	0.02	0.9808	-0.0297
OCF/Assets	76	-0.018 (-0.81)	0.1604 (2.18)**	–	–	-0.0089 (-0.27)	13.29	<.0001	0.2655
ROA (BE)	76	0.0412 (0.77)	0.1029 (0.77)	–	–	-0.0629 (-1.11)	1.32	0.2744	0.0093
ROA (AE)	76	0.0328 (0.61)	0.1029 (0.76)	–	–	-0.053 (-0.94)	1.13	0.3288	0.0038
ROE (BE)	76	0.0065 (0.08)	-0.4063 (-0.59)	–	–	-0.0432 (-0.44)	1.64	0.2015	0.0185
ROE (AE)	76	-0.0054 (-0.07)	-0.3966 (-0.57)	–	–	-0.0292 (-0.30)	1.57	0.2165	0.0164
PM (BE)	69	-0.2434 (-0.74)	0.1576 (0.53)	–	–	0.3236 (0.91)	0.55	0.5798	-0.0134
PM (AE)	69	-0.3351 (-1.02)	0.176 (0.73)	–	–	0.4107 (1.14)	0.92	0.4026	-0.0023
BHAR	76	-10.737 (-1.93)*	0.1207 (0.91)	–	–	-0.4853 (-0.02)	0.14	0.8691	-0.0427

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel E: IAOP_{post} = α + βIAOP_{pre} + γCASH + δINDUSTRY + λFRIENDLY + ε</i>									
HPR _{CF} /Sales	69	-0.0058 (-0.01)	0.151 (0.68)	0.5958 (0.98)	-0.8666 (-1.72)*	0.5718 (1.11)	1.32	0.2712	0.0186
HPR _{CF} /Assets	76	-0.009 (-0.15)	0.1672 (1.23)	0.075 (1.24)	-0.0247 (-0.42)	-0.0305 (-0.52)	1.35	0.261	0.0202
OCF/Sales	69	-0.2282 (-0.62)	0.2317 (0.24)	0.6827 (1.43)	-0.4785 (-1.15)	0.2083 (0.63)	1.29	0.2846	0.0166
OCF/Assets	76	-0.0731 (-1.42)	0.1606 (2.28)**	0.0067 (0.16)	0.0633 (1.14)	-0.0137 (-0.35)	7.11	<.0001	0.2645
ROA (BE)	76	-0.0099 (-0.18)	0.126 (0.9)	0.0948 (1.96)*	-0.0247 (-0.45)	-0.0401 (-0.73)	1.38	0.2494	0.0221
ROA (AE)	76	-0.0335 (-0.62)	0.116 (0.83)	0.0834 (1.71)*	0.0049 (0.09)	-0.0352 (-0.64)	1.17	0.3331	0.0098
ROE (BE)	76	-0.1734 (-1.01)	-0.3737 (-0.57)	0.0197 (0.16)	0.2067 (0.88)	-0.0576 (-0.62)	1.15	0.3393	0.009
ROE (AE)	76	-0.2039 (-1.21)	-0.3585 (-0.56)	0.0026 (0.02)	0.2463 (1.06)	-0.0512 (-0.55)	1.24	0.3016	0.0141
PM (BE)	69	-0.0478 (-0.09)	0.2444 (0.95)	0.6498 (1.07)	-0.8879 (-1.79)*	0.5664 (1.11)	1.52	0.2061	0.0298
PM (AE)	69	-0.2903 (-0.55)	0.2409 (1.17)	0.5652 (0.93)	-0.6114 (-1.21)	0.6027 (1.17)	1.21	0.3144	0.0123
BHAR	76	-9.8437 (-0.73)	0.0963 (0.66)	18.8078 (0.74)	-16.1152 (-0.69)	3.1079 (0.2)	0.27	0.8953	-0.0747

This table presents the results of regressions performed on a Healy et al. regression equation, and an expansion of this equation. An explanation of the accounting ratios used in these regressions is set out in Table 4.1.1. Adjusted ratios are calculated by taking the ratio of a sample firm and subtracting from it the corresponding ratio of its matched firm in control group two. The method of calculating BHARs is set out in section 4.1.3. Adjusted BHARs are calculated by taking the BHAR of a sample firm over a period and subtracting from it the BHAR over a corresponding period of its matched firm in control group one, explained in Table A6.2.2. Panel A reports the results using the basic Healy et al. regression model, with IAOP_{pre} being the pre-performance of sample firms, and Panels B-E reports results investigating the effect that method of payment (CASH), industry relatedness (INDUSTRY) and whether the transaction is friendly or hostile (FRIENDLY) both individually and cumulatively. The input for BHAR is a percentage, accounting ratios are reported in raw form.

***, **, * Denote significance using a two tailed White's adjusted t-test at the 1%, 5% and 10% levels, respectively.

Table A6.3.2 – Healy et al. (1992) Type Regressions for Sample Firms for Two Years Pre- and Post-Merger Adjusted Against Control Group Two

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel A: IAOP_{post} = α + βIAOP_{pre} + ε</i>									
HPR _{CF} /Sales	60	-0.2561 (-0.91)	0.1927 (-0.91)	–	–	–	0.19	0.6642	-0.0139
HPR _{CF} /Assets	66	-0.0002 (-0.00)	0.5559 (2.06)**	–	–	–	15.11	0.0003	0.193
OCF/Sales	60	-0.1224 (-0.72)	-0.1951 (-0.21)	–	–	–	0.05	0.8200	-0.0163
OCF/Assets	66	-0.0262 (-0.85)	0.2479 (1.91)*	–	–	–	14.10	0.0004	0.1816
ROA (BE)	66	0.0062 (0.16)	0.5157 (1.38)	–	–	–	10.90	0.0017	0.1436
ROA (AE)	66	-0.0012 (-0.03)	0.5451 (1.46)	–	–	–	12.31	0.0009	0.1609
ROE (BE)	66	-0.23 (-1.25)	0.744 (1.29)	–	–	–	2.97	0.0900	0.0323
ROE (AE)	66	-0.2374 (-1.29)	0.6965 (1.15)	–	–	–	2.55	0.1158	0.0256
PM (BE)	60	-0.2936 (-1.05)	0.1965 (0.91)	–	–	–	0.20	0.6561	-0.0137
PM (AE)	60	-0.3233 (-1.16)	0.2142 (1.06)	–	–	–	0.26	0.6148	-0.0128
BHAR	68	-38.3721 (-1.72)*	0.1206 (1.19)	–	–	–	0.92	0.3420	-0.0018

Panel B: IAOP_{post} = α + βIAOP_{pre} + γCASH + ε

HPR _{CF} /Sales	60	-0.9102 (-1.26)	0.2747 (1.88)*	1.0393 (1.45)	–	–	1.70	0.1912	0.0233
HPR _{CF} /Assets	66	-0.13 (-1.98)*	0.5754 (2.36)**	0.2103 (2.49)**	–	–	11.35	<.0001	0.2598
OCF/Sales	60	-0.5726 (-1.22)	-0.2302 (-0.27)	0.7321 (1.47)	–	–	1.67	0.1970	0.0223
OCF/Assets	66	-0.137 (-2.26)**	0.2496 (2.10)**	0.1792 (2.49)**	–	–	10.91	<.0001	0.2515
ROA (BE)	66	-0.1264 (-2.77)***	0.5394 (1.57)	0.215 (3.07)***	–	–	10.08	0.0002	0.2353
ROA (AE)	66	-0.1269 (-2.78)***	0.5706 (1.64)	0.2036 (2.90)***	–	–	10.33	0.0001	0.2403
ROE (BE)	66	-0.4244 (-1.67)	0.7356 (1.31)	0.3164 (0.93)	–	–	1.83	0.1699	0.0273
ROE (AE)	66	-0.421 (-1.64)	0.6907 (1.16)	0.2986 (0.87)	–	–	1.57	0.2167	0.019
PM (BE)	60	-0.9205 (-1.27)	0.2623 (1.88)*	1.0004 (1.39)	–	–	1.59	0.2137	0.0195
PM (AE)	60	-0.9327 (-1.28)	0.2891 (2.12)**	0.9685 (1.34)	–	–	1.52	0.2277	0.0173
BHAR	68	-64.4387 (-1.52)	0.0856 (1.07)	46.9692 (1.2)	–	–	1.28	0.2902	0.013

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel C: IAOP_{post} = α + βIAOP_{pre} + δINDUSTRY + ε</i>									
HPR _{CF} /Sales	60	0.1113 (1.33)	0.2391 (1.11)	–	-0.4591 (-1.27)	–	0.28	0.7570	-0.025
HPR _{CF} /Assets	66	-0.0008 (-0.01)	0.5558 (2.05)**	–	0.0007 (0.01)	–	7.42	0.0014	0.1788
OCF/Sales	60	0.0809 (0.45)	-0.1809 (-0.20)	–	-0.2495 (-0.87)	–	0.14	0.8692	-0.03
OCF/Assets	66	-0.0499 (-0.59)	0.246 (1.90)*	–	0.0293 (0.32)	–	6.99	0.0019	0.1687
ROA (BE)	66	0.0213 (0.32)	0.5193 (1.37)	–	-0.0185 (-0.23)	–	5.37	0.0073	0.1291
ROA (AE)	66	-0.0164 (-0.25)	0.5415 (1.43)	–	0.0186 (0.23)	–	6.07	0.0041	0.1466
ROE (BE)	66	-0.2365 (-0.83)	0.7446 (1.32)	–	0.0079 (0.02)	–	1.46	0.2407	0.0154
ROE (AE)	66	-0.2905 (-0.95)	0.7009 (1.19)	–	0.0646 (0.17)	–	1.26	0.2909	0.0088
PM (BE)	60	0.1152 (1.32)	0.2326 (1.08)	–	-0.5073 (-1.43)	–	0.33	0.7210	-0.0233
PM (AE)	60	-0.0224 (-0.57)	0.2408 (1.19)	–	-0.3736 (-1.07)	–	0.25	0.7788	-0.026
BHAR	68	-36.4211 (-2.51)**	0.1208 (1.19)	–	-2.3416 (-0.09)	–	0.45	0.6396	-0.0268

Panel D: IAOP_{post} = α + βIAOP_{pre} + λFRIENDLY + ε

HPR _{CF} /Sales	60	-0.5202 (-0.92)	0.1531 (0.58)	–	–	0.5233 (0.9)	0.51	0.6042	-0.017
HPR _{CF} /Assets	66	0.0055 (0.08)	0.5566 (2.06)**	–	–	-0.011 (-0.13)	7.44	0.0014	0.1791
OCF/Sales	60	-0.2508 (-0.71)	-0.0809 (-0.10)	–	–	0.241 (0.7)	0.20	0.8225	-0.028
OCF/Assets	66	-0.0007 (-0.01)	0.2426 (1.92)*	–	–	-0.0478 (-0.70)	7.19	0.0016	0.1735
ROA (BE)	66	0.0467 (0.65)	0.5242 (1.45)	–	–	-0.0783 (-0.98)	5.95	0.0045	0.1436
ROA (AE)	66	0.0292 (0.41)	0.5516 (1.51)	–	–	-0.059 (-0.74)	6.39	0.0031	0.1545
ROE (BE)	66	-0.2891 (-0.93)	0.759 (1.33)	–	–	0.1118 (0.32)	1.51	0.2301	0.0169
ROE (AE)	66	-0.3115 (-1.00)	0.7153 (1.19)	–	–	0.1402 (0.4)	1.33	0.2738	0.0109
PM (BE)	60	-0.5102 (-0.89)	0.1784 (0.68)	–	–	0.4246 (0.73)	0.37	0.6915	-0.0218
PM (AE)	60	-0.5648 (-0.99)	0.1899 (0.75)	–	–	0.4751 (0.82)	0.47	0.6275	-0.0183
BHAR	68	-32.4375 (-3.51)***	0.1274 (1.11)	–	–	-13.0819 (-0.34)	0.52	0.6002	-0.0235

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel E: IAOP_{post} = α + βIAOP_{pre} + γCASH + δINDUSTRY + λFRIENDLY + ε</i>									
HPR _{CF} /Sales	60	-0.8219 (-1.12)	0.3254 (1.6)	1.3568 (1.43)	-0.919 (-1.30)	0.8869 (1.11)	1.69	0.1645	0.0449
HPR _{CF} /Assets	66	-0.1168 (-1.30)	0.5835 (2.30)**	0.2266 (2.47)**	-0.0549 (-0.62)	0.0416 (0.45)	5.62	0.0007	0.2384
OCF/Sales	60	-0.516 (-1.03)	0.0283 (0.04)	0.9054 (1.4)	-0.5273 (-1.11)	0.5 (0.97)	1.34	0.2651	0.0228
OCF/Assets	66	-0.1273 (-1.47)	0.2488 (2.11)**	0.1777 (2.12)**	-0.0046 (-0.05)	-0.0095 (-0.13)	5.27	0.0011	0.2246
ROA (BE)	66	-0.0651 (-1.08)	0.5541 (1.59)	0.2169 (3.54)***	-0.0593 (-0.73)	-0.0273 (-0.37)	5.05	0.0015	0.2155
ROA (AE)	66	-0.1012 (-1.59)	0.5764 (1.63)	0.2033 (3.24)***	-0.0218 (-0.25)	-0.0149 (-0.20)	5.02	0.0016	0.2141
ROE (BE)	66	-0.4805 (-1.74)*	0.7541 (1.35)	0.373 (1.25)	-0.1029 (-0.26)	0.2004 (0.64)	0.96	0.439	-0.003
ROE (AE)	66	-0.5323 (-1.81)*	0.7161 (1.22)	0.3519 (1.15)	-0.045 (-0.11)	0.2185 (0.7)	0.84	0.5067	-0.0111
PM (BE)	60	-0.7599 (-1.02)	0.3145 (1.61)	1.2968 (1.36)	-0.9291 (-1.32)	0.7889 (0.97)	1.52	0.2099	0.0339
PM (AE)	60	-0.8856 (-1.18)	0.3259 (1.68)*	1.2521 (1.31)	-0.7927 (-1.13)	0.8119 (1.0)	1.42	0.2399	0.0276
BHAR	68	-47.9285 (-2.81)***	0.085 (0.96)	51.2649 (1.26)	-21.3851 (-0.59)	-2.3717 (-0.08)	0.66	0.6267	-0.0339

This table presents the results of regressions performed on a Healy et al. regression equation, and an expansion of this equation. Table A6.3.1 explains how this table should be read.

***, **, * Denote significance using a two tailed White's adjusted t-test at the 1%, 5% and 10% levels, respectively.

Table A6.3.3 – Healy et al. (1992) Type Regressions for Sample Firms for Three Years Pre- and Post- Merger Adjusted Against Control Group Two

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel A: IAOP_{post} = α + βIAOP_{pre} + ε</i>									
HPR _{CF} /Sales	47	-0.4884 (-1.12)	0.288 (-1.19)	–	–	–	0.23	0.6346	-0.017
HPR _{CF} /Assets	51	-0.0976 (-1.73)*	0.6222 (3.57)***	–	–	–	18.87	<.0001	0.2798
OCF/Sales	47	-0.2126 (-0.87)	-0.2067 (-0.30)	–	–	–	0.07	0.7972	-0.0207
OCF/Assets	51	-0.0737 (-1.49)	0.4584 (3.38)***	–	–	–	19.96	<.0001	0.2919
ROA (BE)	51	-0.058 (-1.22)	0.5531 (2.53)**	–	–	–	15.05	0.0003	0.2339
ROA (AE)	51	-0.058 (-1.23)	0.5594 (2.58)**	–	–	–	15.52	0.0003	0.2399
ROE (BE)	51	-0.4688 (-0.74)	1.1167 (3.41)***	–	–	–	1.26	0.2685	0.0055
ROE (AE)	51	-0.4713 (-0.74)	1.1257 (3.43)***	–	–	–	1.27	0.2662	0.0058
PM (BE)	47	-0.5142 (-1.17)	0.2542 (1.24)	–	–	–	0.19	0.6622	-0.0178
PM (AE)	47	-0.5145 (-1.18)	0.2558 (1.24)	–	–	–	0.20	0.6603	-0.0178
BHAR	53	-45.4612 (-2.12)**	-0.0207 (-0.21)	–	–	–	0.01	0.9040	-0.024

Panel B: IAOP_{post} = α + βIAOP_{pre} + γCASH + ε

HPR _{CF} /Sales	47	-1.3666 (-1.22)	0.2602 (1.46)	1.3848 (1.26)	–	–	1.41	0.256	0.0173
HPR _{CF} /Assets	51	-0.2364 (-1.85)*	0.6587 (4.54)***	0.2154 (1.55)	–	–	11.42	0.0001	0.3119
OCF/Sales	47	-0.8357 (-1.23)	-0.0921 (-0.17)	0.9687 (1.4)	–	–	1.53	0.2269	0.0227
OCF/Assets	51	-0.2205 (-2.29)**	0.4592 (3.93)***	0.2298 (2.10)**	–	–	13.34	<.0001	0.3492
ROA (BE)	51	-0.1915 (-2.12)**	0.577 (3.09)***	0.208 (1.95)*	–	–	10.13	0.0002	0.2842
ROA (AE)	51	-0.1902 (-2.13)**	0.5831 (3.16)***	0.2059 (1.95)*	–	–	10.36	0.0002	0.2892
ROE (BE)	51	0.3142 (0.59)	1.0552 (2.80)***	-1.2177 (-1.14)	–	–	1.03	0.3639	0.0015
ROE (AE)	51	0.3136 (0.59)	1.0642 (2.82)***	-1.2204 (-1.15)	–	–	1.04	0.3611	0.0018
PM (BE)	47	-1.3821 (-1.22)	0.2251 (1.53)	1.369 (1.23)	–	–	1.33	0.2746	0.0142
PM (AE)	47	-1.3808 (-1.22)	0.227 (1.54)	1.3665 (1.22)	–	–	1.33	0.2755	0.0141
BHAR	53	-102.378 (-1.79)*	-0.0137 (-0.12)	93.3259 (1.5)	–	–	1.50	0.2344	0.0235

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel C: IAOP_{post} = α + βIAOP_{pre} + δINDUSTRY + ε</i>									
HPR _{CF} /Sales	47	0.0398 (0.85)	0.3368 (1.29)	–	-0.6655 (-1.22)	–	0.30	0.7425	-0.0314
HPR _{CF} /Assets	51	-0.0185 (-0.27)	0.6311 (3.60)***	–	-0.0982 (-1.03)	–	9.52	0.0004	0.2702
OCF/Sales	47	-0.0794 (-0.83)	-0.1697 (-0.26)	–	-0.1667 (-0.63)	–	0.06	0.9421	-0.0426
OCF/Assets	51	-0.0653 (-0.65)	0.4597 (3.36)***	–	-0.0106 (-0.09)	–	9.76	0.0003	0.2759
ROA (BE)	51	0.0054 (0.1)	0.5602 (2.53)**	–	-0.0787 (-1.01)	–	7.60	0.0015	0.223
ROA (AE)	51	0.008 (0.15)	0.5665 (2.58)**	–	-0.082 (-1.04)	–	7.86	0.0012	0.2297
ROE (BE)	51	0.0836 (0.97)	1.1444 (3.26)***	–	-0.6865 (-0.86)	–	0.70	0.5010	-0.0131
ROE (AE)	51	0.0827 (0.97)	1.1516 (3.27)***	–	-0.6882 (-0.87)	–	0.71	0.4978	-0.0128
PM (BE)	47	0.0261 (0.92)	0.2904 (1.31)	–	-0.6774 (-1.26)	–	0.29	0.7521	-0.032
PM (AE)	47	0.0262 (0.93)	0.2917 (1.32)	–	-0.6778 (-1.26)	–	0.29	0.7510	-0.0319
BHAR	53	-51.0595 (-1.63)	-0.0209 (-0.21)	–	6.7053 (0.15)	–	0.01	0.9888	-0.0494

Panel D: IAOP_{post} = α + βIAOP_{pre} + λFRIENDLY + ε

HPR _{CF} /Sales	47	-0.874 (-1.06)	0.3206 (1.07)	–	–	0.7745 (0.95)	0.53	0.5909	-0.0207
HPR _{CF} /Assets	51	-0.1001 (-1.21)	0.6225 (3.55)***	–	–	0.0051 (0.04)	9.23	0.0005	0.2634
OCF/Sales	47	-0.4177 (-0.87)	-0.1187 (-0.19)	–	–	0.4118 (0.86)	0.31	0.7372	-0.0311
OCF/Assets	51	-0.0485 (-0.57)	0.4533 (3.42)***	–	–	-0.0499 (-0.50)	9.92	0.0003	0.2795
ROA (BE)	51	-0.0354 (-0.51)	0.551 (2.60)**	–	–	-0.0462 (-0.47)	7.49	0.0016	0.2201
ROA (AE)	51	-0.0376 (-0.54)	0.5575 (2.65)**	–	–	-0.0416 (-0.43)	7.7	0.0014	0.2255
ROE (BE)	51	-1.3168 (-1.11)	1.2677 (2.83)***	–	–	1.704 (1.35)	1.52	0.2308	0.022
ROE (AE)	51	-1.3236 (-1.11)	1.2772 (2.83)***	–	–	1.7122 (1.36)	1.53	0.2274	0.0226
PM (BE)	47	-0.8729 (-1.04)	0.2955 (1.1)	–	–	0.7157 (0.86)	0.44	0.6441	-0.0248
PM (AE)	47	-0.874 (-1.04)	0.2972 (1.11)	–	–	0.7174 (0.86)	0.45	0.6423	-0.0246
BHAR	53	-35.1064 (-2.87)***	0.0022 (0.03)	–	–	-24.4384 (-0.48)	0.10	0.9062	-0.0448

Performance Measure	n.	Constant	IAOP _{pre}	CASH	INDUST	FRIEND	F-Stat	p-value	Adj-R ²
<i>Panel E: IAOP_{post} = α + βIAOP_{pre} + γCASH + δINDUSTRY + λFRIENDLY + ε</i>									
HPR _{CF} /Sales	47	-1.0936 (-1.12)	0.4036 (1.53)	1.9212 (1.3)	-1.4672 (-1.24)	1.1068 (1.1)	1.52	0.2141	0.0432
HPR _{CF} /Assets	51	-0.1345 (-1.10)	0.6923 (4.77)***	0.2824 (1.78)*	-0.214 (-1.46)	0.0554 (0.5)	6.19	0.0005	0.3109
OCF/Sales	47	-0.76 (-1.20)	0.2543 (0.72)	1.2835 (1.35)	-0.7587 (-1.05)	0.659 (1.03)	1.31	0.2809	0.0265
OCF/Assets	51	-0.1474 (-1.20)	0.4719 (4.07)***	0.2564 (1.85)*	-0.1093 (-0.70)	-0.0074 (-0.07)	6.63	0.0003	0.3287
ROA (BE)	51	-0.0769 (-1.07)	0.598 (3.20)***	0.2536 (2.41)**	-0.177 (-1.74)*	-0.0027 (-0.03)	5.5	0.0012	0.2812
ROA (AE)	51	-0.0763 (-1.07)	0.6042 (3.24)***	0.2531 (2.42)**	-0.1801 (-1.78)*	0.0019 (0.02)	5.64	0.001	0.2876
ROE (BE)	51	-0.3477 (-0.80)	1.2348 (2.59)**	-0.8352 (-1.01)	-0.4699 (-0.59)	1.5958 (1.37)	0.87	0.4872	-0.011
ROE (AE)	51	-0.3524 (-0.81)	1.2431 (2.60)**	-0.8367 (-1.02)	-0.471 (-0.59)	1.6036 (1.38)	0.88	0.4825	-0.0103
PM (BE)	47	-1.0726 (-1.08)	0.3522 (1.51)	1.894 (1.27)	-1.4614 (-1.24)	1.0442 (1.02)	1.41	0.247	0.0345
PM (AE)	47	-1.0725 (-1.08)	0.3538 (1.51)	1.8918 (1.27)	-1.461 (-1.24)	1.0456 (1.02)	1.41	0.2473	0.0344
BHAR	53	-77.3357 (-2.18)**	-0.0058 (-0.06)	98.8918 (1.46)	-30.5694 (-0.52)	-6.8771 (-0.17)	0.76	0.5551	-0.023

This table presents the results of regressions performed on a Healy et al. regression equation, and an expansion of this equation. Table A6.3.1 explains how this table should be read.

***, **, * Denote significance using a two tailed White's adjusted t-test at the 1%, 5% and 10% levels, respectively.

Appendix B: The Datasheet Used in the Data Collection Process

Name:

Type (Acquirer/Target/Control):

Date of Acquisition (if Applicable):

Year 0 Balance Date:

Matched to:

	-4	-3	-2	-1	0	1	2	3
Balance Date								
# months in period								

Profit and Loss

Operating Profit Before Tax								
Interest Expense								
Depreciation Expense								
Amortisation Expense								
Operating Profit After Tax and Extraordinaries								
Operating Profit After Tax but before Extraordinaries								
Sales Revenue								

Balance Sheet

	-4	-3	-2	-1	0	1	2	3
Total Assets								
Current Assets								
Non-Current Assets								
Cash								
Goodwill								
Other Intangibles								
Total Liabilities								
Current Liabilities								
Non-Current Liabilities								
Total Equity								
Issued Capital								
Preference Share Capital								
Shares on Issue								
Statutory Tax Rate								
Preference Dividends								
Ordinary Dividends								
Outside Equity Interest								

Statement of Cash Flows

	-4	-3	-2	-1	0	1	2	3
Operating Cash Flows								
Interest Paid								
Interest Received								
Dividend Paid								
Dividend Received								
Income Tax Paid								
CF from Investing								
CF from Financing								

Notes

Auditor's Name								
Percentage of target being consolidated								
What acquisitions were Made in the year?								
Reason for delisting (if applicable)								
Name changes in parent or acquired firm								
Did a 'mop-up' occur?								
Other notes								