

Managerial and Decision Economics, 2009, Volume 30, Number 4, Pages 211-233

FULL TITLE:

**STOCK MARKET PERCEPTIONS OF THE MOTIVES FOR
MERGERS IN CASES REVIEWED BY THE UK COMPETITION
AUTHORITIES: AN EMPIRICAL ANALYSIS.**

SHORT TITLE:

**STOCK MARKET PERCEPTIONS OF THE MOTIVES FOR
MERGERS.**

Abstract.

A number of studies have considered the motivation of managers to follow a merger strategy. However, as far as we are aware none has looked at the influence of competition regulation on merger motives using stock market data and event study techniques. Data drawn from 63 merger cases in the UK between 1989 and 2003 are examined for the stock market's perceptions of what motivated managers to pursue their initial merger bid. The findings suggest the Synergy and Hubris dominate as motivations for mergers and that, unintentionally, competition policy may help to reduce the number of mergers motivated by Managerialism.

Key words: Mergers, motivation, synergy, hubris, managerialism, event study, competition regulation.

JEL classification: L40, K21

Introduction.

What motivates managers to follow merger and acquisition¹ strategies when the chances of success are about fifty-fifty or worse has been the subject of a number of studies. A considerable volume of literature has been produced relating to the understanding of merger performance (for a review of earlier literature see Chiplin and Wright, 1988, pp 66-73; for later studies see Sirower, 1997, Appendix A pp145-166; for comparisons of US, UK and European performance on a short and long-run basis see Sudarsanam, 2003, Chapter 4.) and the link to managerial behaviour during the formation of merger plans. A number of studies have considered the relationship between managerial behaviour and external monitoring. For example, work by Wright et al. (2002) has provided evidence that weak external monitoring in manager-controlled firms leads to Chief Executive Officer (CEO) remuneration being linked to firm size rather than performance. Such a result is consistent with managerial behaviour associated with what is known as “managerialism” or managerial self-seeking. Further evidence of the importance of external monitoring has been produced by Desai et al. (2005) and Sudarsanam and Mahate (2006), who examined the effects of outside board monitoring on acquisition outcomes. Desai et al found that the number of outside board members had a positive relationship with acquisition returns in manager-controlled firms but not in owner-manager-controlled and owner-controlled enterprises. Sudarsanam and Mahate also found strong evidence to support that acquirers with good corporate governance, as measured by the number of outside board members, had better post acquisition performance. Work by Grinstein and Hribar (2004) also found that CEOs with more power to influence board decisions (e.g. where there are low numbers of outside board members and with combined CEO / Chairman roles) tended to engage in larger deals, and this finding was consistent with the argument that managerial power is the primary driver of mergers. Holl and Kyriazis (1997) investigated the effect of target company bid resistance on wealth creation for the target company shareholders, and found evidence of conflict between managers’ and shareholders’ views.

¹ This paper discusses mergers and acquisitions cases that have been scrutinised by the UK competition regulators. In this paper “merger” is used to cover both merger and acquisition, and the terms are used interchangeably.

These earlier studies have looked at the role of external monitoring by outside board members and shareholders. This paper investigates the possible effects of external monitoring of mergers by the competition authorities. In the UK, the OFT considers merger cases above a statutory threshold value for compliance with the prevailing competition legislation. The OFT may then refer cases to the Competition Commission for further examination where the OFT considers that the merger may not be in the public interest or more recently where it suspects a substantial lessening of competition.² Between 1989 and 2003 there was an annual average of 690 mergers in the UK, peaking at 1337 cases in 1987 and with a low of 432 in 1992.³ From a total of 11,045 cases over that period, around 31% qualified for examination by the OFT with only 1.6% of all mergers then being referred to the Monopolies and Mergers Commission (MMC), and the Competition Commission (CC) from 1 April 1999, when it replaced the MMC. This process results in a small number of merger cases being examined in depth by external parties with considerable policing powers who can ultimately prohibit mergers or require behavioural or structural remedies.⁴ This paper is concerned with whether this process influences the motives for mergers by indirectly assessing stock market investors' perceptions of the mergers.

The research considers the extent to which Synergy, Managerialism and Hubris are perceived to be present by the capital market in merger cases scrutinised by the UK competition authorities. The underlying approach adopted in the paper is that managers (perhaps after prodding by their legal advisors) will take into account the possibility of scrutiny by the OFT and reference to the MMC/CC when shaping their merger plans. They should have taken a view as to whether their proposed merger bid was likely to be challenged by the competition authorities and perhaps prohibited. This anticipation of investigation can be expected to result in a deterrent effect, with managers becoming more careful when preparing their initial bid in an attempt to reduce the risk of referral. In some cases managers may voluntarily agree to omit

² Originally the test was based on whether the merger was in "the public interest". With the enactment of the Enterprise Act 2002, the test became "a substantial lessening of competition". Our study period covers mergers up to 2003 and therefore mergers based on the "public interest" test. However, in principle the research findings should be equally applicable to mergers since 2003.

³ Source; Office of Fair Trading Annual Reports.

⁴ A behavioural remedy would include a cap on prices or agreement to supply a particular output. A structural remedy would include divestment of some or all of the assets acquired under the merger. Generally the competition authorities prefer structural remedies.

some assets from the acquisition process or may cancel merger plans altogether. Additionally, the process of referral and inquiry takes several months, during which time the merger bid is frozen. This allows time for reconsideration and reflection by investors and the bidder and target firms' management and while any takeover defence is being prepared in the case of a hostile bid. During this period errors may be identified, or reconsiderations may take place as to the prudence of the deal, which may lead to the bid being withdrawn or amended at some stage. In other words, scrutiny of the merger by the competition authorities and the threat of possible detailed external investigation and public reporting of the decision may modify the incidence of Managerialism or Hubris as the motivation for mergers. In effect, the competition authority's external monitoring of merger cases can influence management behaviour and motives. This complements our knowledge of the role and importance of external monitoring highlighted in earlier studies, for example in the form of non-executive directors on boards (Grinstein and Hribar, 2004; Desai et al., 2005; Wright et al., 2002).

It should be stressed that it is not the responsibility of the competition regulators to protect shareholder value. Regulators are concerned with protecting the interests of consumers. However, what our research suggests is that competition regulation *may, unintentionally, do so*. The study complements research into the welfare effects of UK competition policy (e.g. Forbes, 1994; Franks and Harris, 1993; Clarke et al., 1998), the effects of changes in competition policy regimes (e.g. Eckbo, 1992; Brady and Feinberg, 2000; Duso et al., 2003; Arnold and Parker, 2007) and studies which have considered the effects of competition policy by considering the stock market prices of competitor firms (e.g. Eckbo, 1983; Stillman, 1983). As it is difficult to research directly management motives for mergers, because of potential response bias, the focus of this study is on the relationship between *stock market perceptions of the motive for mergers* in cases subject to scrutiny by the UK competition regulatory regime. The paper is organised as follows: first the relevant literature is reviewed and then the method, data and test propositions adopted for the empirical work are described. The results are then reported and discussed, before the implications of the findings for future research are detailed.

Literature review

This paper examines groups of merger cases between 1989 and 2003. Share price data are examined for patterns of price changes which are categorised through a set of hypothetico-deductive tests. The hypothetico-deductive methodology established by Berkovitch and Narayanan (1993) and Seth et al (2000), reviewed below, is employed in this study to reveal the capital market's perceptions of the motivations for the mergers. These perceptions are categorised into three managerial motivation theories relating to mergers in the literature, namely: the *Synergy* seeking hypothesis, *Managerialism* and *Hubris*. Under the Synergy hypothesis managers are assumed to be motivated to increase shareholder value and accurately judge the value of the combined firm. Mergers therefore create value for shareholders through cost reductions and other synergies when two or more firms are brought together. Managerialism⁵, in contrast, assumes that managers are not motivated by maximising shareholder value but are concerned with maximising their own utility. Mergers are pursued to increase managers' utility through control of larger empires resulting in higher pay levels, bonuses and the like. This explanation assumes value is diverted from shareholders to managers, who judge that the value left for shareholders is just sufficient to satisfy them. The third explanation, the Hubris hypothesis, proposes that bidding managers make mistakes when evaluating target firms and judging the value of the combined firm, but proceed with the merger assuming their valuations are correct. This suggests that mergers may be a product of information imperfections and of excessive pride or arrogance by managers.

These different hypotheses relating to management behaviour during mergers lead to different expectations about performance post-merger. Whereas the Synergy hypothesis is associated with the creation of value and hence an expectation of successful mergers, Managerialism and Hubris are more associated with value loss and disappointing post-merger performance.

Various explanations have been proposed for why firms become involved in mergers.

⁵ This is also known as the Agency hypothesis because it relates to the set of problems encountered when employing agents through contracts where the Principal's and the Agent's objectives do not entirely align.

Berkovitch and Narayanan (1993) and later Seth et al. (2000) examined groups of merger cases for these three motives through event studies of share price data to categorise the capital market's perception of the merger motivation. The general conclusion was that the Synergy hypothesis had the strongest evidence to support it. However, they also found evidence supporting both the Hubris and Managerialism hypotheses. The research addressed the part played by these three hypotheses in US firms in domestic and cross-border mergers. We first look at the three motivational hypotheses in more detail, and then discuss our research using these hypotheses.

The Synergy hypothesis proposes that managers are motivated to create value. Mergers take place when the value of the combined firm is greater than the sum of the values of the individual firms (Singh and Montgomery, 1987; Bradley et al., 1988; Seth, 1990). This increase in value is shared between the owners of the acquiring firm and the target firm. As competition for ownership of the target increases, the target receives an increasingly large proportion of the value due to the higher acquisition price. When all the benefits of merging are captured by the owners of the target firm, the acquiring firm has no incentive to undertake the merger. Under this hypothesis the bidder is able accurately to judge the value of the combined firm and withdraws from the merger when the merger will no longer create additional value for the bidder's shareholders. The additional value of the combined firm can arise from various sources, including improved asset utilisation, intellectual property, improved efficiency of operations, increased market power or gains from financial engineering.

Underlying the Synergy hypothesis is the general explanation for firm growth provided by Penrose (1959). Penrose views the firm as a collection of productive assets and proposed the long-run profitability of the firm is closely associated with the ability to use its tangible and intangible assets more efficiently. The search for productive opportunities leads the firm to seek new products and markets in which it can grow and maintain or increase its marginal revenues. The Synergy hypothesis assumes that the firm is unique and specialised resources are not acquired without cost. However, transfer of assets occurs when value can be created, and value-

destroying transfers are not carried out⁶. The Synergy hypothesis explains the motivation of bidding firms to undertake value-creating mergers, but research has shown that a significant number of mergers either fail to create or even destroy value. For example, Meeks (1977) made an early study of the effects of mergers in the UK on firm profitability. He concluded that between a half and two-thirds of the firms in his UK sample suffered a fall in profits after a merger. Later, Sirower (1997) studied stock market prices in US mergers. He found strong support for a negative relationship between the level of premium paid and the acquiring firms' performance. Over the past three decades a flow of studies, for example, as summarised by Sudarsanam (2003, pg. 71-86), has produced the following conclusions. While around a half or more of all mergers fail to achieve economic synergies, shareholders in target firms benefit more than shareholders in bidding firms. This is because a bidder may overestimate the possible economic gains from a merger, and overpays the level of premium to shareholders in the target firm to win their acceptance of the takeover bid. Whether this overpayment is done knowingly or in error (see Seyhun, 1990), the Managerialism and Hubris hypotheses were proposed to explain the motivation for mergers where value is not created.

The Managerialism hypothesis, suggests managers knowingly overpay in takeovers. Managers embark on mergers to maximise their own utility, at the expense of the shareholders of the acquiring firms. Gains to shareholders are judged to be just sufficient to avoid a shareholder challenge to the manager's plans. Jensen and Meckling (1976) proposed a modified theory of the firm incorporating agency costs in their seminal model of governance. Later studies suggested that managerial behaviour often results in seeking growth of the firm (rather than shareholder returns), and Wright et al. (2002), and Grinstein and Hribar (2004) established positive relationships between company size and CEO remuneration; while Jensen et al. (2004) provide a full summary of remuneration policies and related agency problems. The pursuit of managers' interests can result in reallocating value away from shareholders and to managers. A further effect can take place in mergers when a target firm's management realises the managerial motives of the bidder firm and negotiates

⁶ Value is created only when the premium paid for the target firm is less than the total possible benefits and cost savings less any merger deal transaction costs. Greater payments than this are referred to as "overpayments" in this paper.

better terms for the target firm's shareholders in return for agreeing to the merger. This represents a further reallocation of value to the target firm and possible increased managerial rents in the combined firm. Management has more motivation to take such actions when management has a low personal stake in the value of the firm, or shareholders are fragmented without any one shareholder holding a large part of the equity, or for other reasons governance is weak with low external monitoring of the firm (Desai et al., 2005). Berkovitch and Narayanan (1993) and Seth et al. (2000) found evidence of Managerialism in their studies, specifically in the sub-sample of US takeovers that produced negative gains in shareholder value.

The Hubris hypothesis proposed by Roll (1986) suggests that mergers also occur because managers make mistakes in evaluating target firms. In cases of mergers without any potential benefits or synergies, but where some bidding firms passionately believe such gains exist, the bidder's valuation of the target can be considered as a random variable whose mean is the current market price of the company. Roll argues that, although bidding managers can make errors of both overvaluation and under valuation, the observed error is typically in the direction of overvaluation. Underestimates of valuation are truncated because they are below the current market price of the target company and are not pursued. Only the overvaluation cases are observed, when the bids become part of the public record. The extreme version of the Hubris hypothesis predicts that there are no synergistic gains from takeover bids and the entire premium paid to the target firm is a transfer from the bidder. This extreme view assumes strong form market efficiency, and therefore any premium over the market price must represent a valuation error, as the current market price of its shares already fully reflects the true value of the target firm. Without taking this extreme view, considering the market price as an average view of the target's value by the capital market allows individual bidder valuations to vary above and below the market price, depending on individual unique factors perceived by bidders. Assessment of the benefits arising from the merger is the key to the bidder's accurate valuation of the target. Considering the incomplete and uncertain information available, information asymmetry and time pressures on a small number of managers preparing these valuations, errors of valuation, to some degree, will be made. If the bidding company is not pushed to the limit of its valuation by the target's

shareholders refusing to sell their shares at a lower price or competitive bidders pushing up the target's share price, the valuation error may be masked. As pressure rises to pay a greater premium for the target's shares, so does the chance of the public being able to infer any valuation error from the higher bid price.

No one theory alone is likely to provide a complete explanation of merger motives to be found in the total population of mergers. For example, stock market perceptions of Synergy motivated mergers may be found in part of the merger population with non-negative combined gains, and Managerialism motivated cases in the negative combined gains group. Combined gains are the summed value gains (positive or negative) for bidder and target company shareholders based on the share price returns. Mergers that the stock market judges as motivated by Hubris would be predominately found in the non-positive combined returns group. Roll (1986) concluded that the Hubris hypothesis could not alone explain the motivation for mergers. Seth and Thomas (1994) concluded all three theories of the firm will coexist in the total population of mergers. We would therefore expect to find evidence of all three motivational theories coexisting to some degree with each other. In particular because Hubris is a halfway house between Synergy and Managerialism in terms of the effects on shareholder value, distinguishing Hubris from the other motives can be problematic, as our results confirm

Berkovitch and Narayanan (1993) proposed a methodology for distinguishing between the motives when they coexisted in a sample, based on the relationship between target and combined shareholder gains using stock market data. They argued that this correlation should be positive if Synergy is the motive, negative if Managerialism is the motive and zero if Hubris is the motive. They concluded from a sample of US mergers between 1963 and 1988 that synergy was the primary motive in the group of mergers with positive combined gains and coexisted with Hubris. In the negative combined gains group Managerialism was the primary motive. Later Seth et al. (2000) developed the methodology proposed by Berkovitch and Narayanan to examine bidder motives for cross-border mergers. Their conclusions were almost identical to those of Berkovitch and Narayanan (1993). Both Seth et al. (2000) and Berkovitch and Narayanan (1993) developed a set of hypothetico-deductive tests for

abnormal gains made by the shareholders of bidder, target and combined firms during the bids based on each of the three hypotheses. The approach adopted in their studies is the one used in this paper, categorising the capital market's perceptions of the mergers at the time the events were announced. This paper is unique, however, in using the method to consider the question of whether any relationships exist between merger motives and ex-post outcomes of mergers under the UK competition regulation process. Also, we stress more than in the earlier papers that the results obtained from stock market data reflect the stock market's perceptions of the motivation for mergers and not necessarily the actual views of the management involved at the time. Nevertheless, we would expect a well-informed capital market to have a strong bias towards a correct judgement.

Data, Method and Tests

Overview of method.

In this paper managerial motivation for mergers is categorised by studying the pattern of share price changes of merging firms. It is the stock market's assessment of the merger, at the time of the merger, that classifies the motivation and therefore the method presumes that the capital market is able to take a competent and reasoned view of the value adding potential of individual mergers. An alternative methodology would be to question managers directly about their reasons for embarking on merger activities, but this approach suffers from several serious problems. The interviews would be carried out retrospectively, perhaps several years after the merger event and memories may be influenced by the subsequent performance of the merged firm. Also, there may be difficulty in gaining access to managers for interviews and even where access is achieved managers are unlikely to reveal or even concede that their motives involve "hubris" let alone "managerialism". The method we adopt uses the historic share price record at the time of the merger, which is based on the collective judgement and perception of investors in the capital market at the time. It is consistent with the approach adopted in earlier literature, notably that by Berkovitch and Narayanan (1993) and Seth et al. (2000). The method adopted uses event study techniques to identify abnormal returns to bidder and target firms. Tests of the

patterns of these abnormal returns are used to categorise the perceived motivations present in each group of merger cases analysed.

In the study mergers are grouped as they were treated by the competition authorities, namely (1) waived through by the OFT – no concerns on competition grounds; or (2) referred to the MMC/CC and then allowed and completed; or (3) referred to the MMC/CC and not completed. After referral to the MMC/CC a merger may not be completed because either the bidding company withdraws its merger bid or the competition authorities prohibit the merger. For those unfamiliar with UK competition policy, Figure 1 details the regulatory process (for those requiring a fuller explanation of the development of UK competition regulations, see, for example, Wilks, 1999). The mergers reviewed in this study are examined using stock market data and event study techniques in order to categorise the perceived merger motivation during the initial bid stage and before the referral or waive through decision is made by the OFT. This approach allows all the cases to be examined on a consistent basis even when some mergers were not subsequently completed. In studying the effects of competition policy, it is essential to include abandoned and prohibited mergers, as well as those that were completed. By concentrating on the initial bid stage, the study also aims to exclude any influences on stock prices resulting from later events unrelated to the initial decision to merge.

(Figure 1 here)

Data.

A total of 63 merger cases between 1989 and 2003 were examined using stock market data and event study techniques. This period was free of major changes to the merger regulation policy, which had become well established by 1989.⁷ All cases were

⁷ The period between 1989 and June 2003 was governed by the Fair Trading Act (1973), which used the “public interest” test. The Enterprise Act (2002) replaced this test with the more specific “substantial lessening of competition” test, in June 2003. The period from 1989 to 2003 was therefore a period in which the merger regulation regime was free from major policy changes. It also started 15 years after the Fair Trading Act (1973) became law, during which time knowledge and experience of how the regulatory policy was applied had been accumulated. Managers and their professional advisers were therefore operating in a stable and well understood regulatory environment when taking merger decisions.

considered by the OFT. To be suitable for the event study analysis, both bidder and target firms had to be quoted on a public stock exchange with daily share price information available from DataStream for a period one year before the bid. This meant that many mergers considered by the OFT and a number of the 156 cases referred to the MMC/CC during the study period could not be included. The data set consisted of 44 merger cases, of which 21 were completed and 23 were not. In addition, a matched stratified sample of 19 merger cases waived through by the OFT was included. The waived through group was stratified on the basis of time to match the number of qualifying merger cases in each year of the period studied. The waived through sample stratification and the mergers included in this study are shown in Appendix A. The “sample” of 63 is small but is necessarily so given the number of merger cases reviewed by the UK competition authorities between 1989 and 2003.

“Waived through” mergers are those mergers in the study which were not referred to the MMC/CC by the OFT. They represent those mergers considered by the OFT but where they concluded that there were insufficient concerns to warrant further investigation on competition grounds. To generate the sample of “waived through” cases, random dates were generated within a range covering the study period. Media databases of financial press articles, press releases and media newswires were then searched by date for suitable cases. The London Stock Exchange has published Press Releases through its Regulatory News Service (RNS) since 30 September 1991 to ensure listed company announcements are treated consistently and communicated promptly to the financial markets. Prior to that date communications were less formalised. RNS press releases have several standard forms, which can be used as key search words. Prior to 1991 general searches of the financial press and media newswires were used to identify cases.

The Event Study Method.

A conventional event study approach is used to estimate the announcement abnormal returns for firms during the initial bid phase using stock market data. The abnormal returns are calculated from the market model as a percentage return over the event window, expressed as a percentage of the share price two days before the initial bid announcement. A market model was estimated using OLS regression, comparing each

company's daily share price changes (bidder and target) against changes in the major index for the stock exchange on which the companies were quoted, i.e. the FTSE All Share index for UK listed companies.⁸ The model estimation period was from one calendar year before the bid announcement to two days before the final event (i.e. bid closed, abandoned or prohibited) and event window days were excluded from the estimation of the market model⁹. In this study the event windows were set at three days because this period should encompass immediate lead and lag effects,¹⁰ while restricting the possibility of including share price changes resulting from events exogenous to the regulatory process. Setting a longer event window risks introducing effects on the share price that are independent of the announcement or what are known as "confounding" events in event studies. The abnormal return is calculated taking the period from one day before the bid announcement to one day afterwards.

For each bidder and target company the market model was estimated as follows:

⁸ The estimation period is the number of (daily) observational data pairs used for this regression. The event window is the number of (daily) observations used for calculating the abnormal return (AR) for the event given by the difference between the actual stock price movement and the forecast from the market model regression equation. Dividends were excluded because short-term announcement returns around the event days were required.

⁹ Continuing the estimation period to cover times immediately before events, when trading may have been based on rumours and speculation, allows the market model to take this into account. In this paper the approach allows the determination of the abnormal returns occurring as a result of published information at the events, such as the terms of the bid, and minimises the effects of trading which is not based on published information, such as rumours and speculation about a possible bid.

¹⁰ To consider the effect of a regulatory or bid announcement on the share price on the day of the announcement only would exclude any effect on share prices resulting from lead effects (rumours, stock market anticipation of the announcement content) and lag effects (time for the market to assimilate the full likely effect on the share price of the announcement). The event window was set to a three-day period, from one day before the event through to one day after the event. A sensitivity analysis was undertaken to see if the results were affected by altering the event window duration and estimation period. The effect of varying the event window has the most obvious effect on the calculated abnormal return (AR). The sensitivity analysis modelled the effect of changing the event periods from D-30 days through to D+30 days on the statistical significance of the AR calculated for the event window. The effect of changing the estimation period impacts on the statistical error arising from the regression. This imposes an error on the forecast and hence the AR. Increasing the estimation period reduces the error, but can introduce data from a period not relevant to the event window being measured. Also, estimation periods of less than one year may be biased by seasonality effects. The estimation period used in the research uses daily stock price data from one year before the initial bid to the close of deal (or abandonment) excluding event window days. In practice this gives estimation periods for cases ranging of from 270 to 779 working days with a mean of 401 days. Sensitivity analysis was conducted by reducing the estimation period to 260, 130 and 65 working days representing one year, six months and three months. The results of the sensitivity analysis suggested that the event duration window and estimation period chosen were sound (full details can be obtained from the authors).

$$R_{it} = \alpha_i + \beta_{im} R_{mt} + \varepsilon_{it}$$

where R_{it} represents the return on security i on day t , α_i is a constant, R_{mt} represents the return on the market portfolio for day t , β_{im} is the regression coefficient of the relationship between security i and the market index, and ε_{it} represents a random error term. Dummy values were used to remove event window days from the estimation regression. The abnormal return is the difference between the actual return and the expected return, and for any security, i , at time t , AR_{it} , is:

$$AR_{it} = R_{it} - (\alpha_i + \beta_{im} R_{mt})$$

The cumulative abnormal return (CAR) for event windows was calculated by summing the daily abnormal returns:

$$CAR_{iT} = \sum_0^T AR_{it}$$

where CAR_{iT} is the cumulative abnormal return for security i over event window T .

Average cumulative abnormal returns (ACAR) across n firms is:

$$ACAR = \frac{\sum_{i=1}^n CAR_{it}}{n}$$

All event windows were examined for confounding events occurring around the event period. In most cases event windows were clear of other potentially price sensitive announcements. In some cases, for example where a company was involved in multiple bids or other major company activities were ongoing, events sometimes overlapped. In such cases a judgement was made on the basis of whether the overlapping event was related to the merger being examined or not. If it was considered to be related, the event would be included in the abnormal return calculation, otherwise it was excluded.

The statistical significance testing for the ARs and CARs is discussed in depth in Salinger (1992), which shows the variance of the CAR is given by:

$$Var(CAR_{it}) = \sigma^2 T \left[1 + \frac{T}{U} + \frac{T \left[\frac{r_{m0}^T}{T} - \bar{r}_m \right]^2}{U Var(r_m)} \right]$$

where T and U are the lengths of the event window and estimation periods respectively, σ^2 is the variance of ε_{it} , \bar{r}_m and $Var(r_m)$ are the mean and variance of the market return over the estimation period, and r_{m0}^T is the continuously compounded market return over the event window.

The test statistic used is $t = CAR / Var(CAR)$. When the degrees of freedom are large (e.g. greater than 200) this approximates to a normal distribution and $t_{v \rightarrow \infty} = Z$, where v is the degrees of freedom.

When n firms are averaged the test statistic for the averaged group is calculated as:

$$Z_{ACAR} = \frac{\sum_{i=1}^n Z_i}{\sqrt{n}},$$

where Z_i is the Z statistic for individual firms, and n is the number of firms in the group.

To treat all cases in a consistent manner and to allow comparisons between the various groups, the event study window has been limited to cover the initial bid announcement period prior to a regulatory decision. Abnormal returns were only measured for merger related events between the day before the initial bid announcement day and two days before the announcement day of the decision that the merger would either be waived through by the OFT or referred to the MMC/CC. No events were considered outside this window because events from the waive through / referral decision onwards have differing impacts on each merger depending on the decision made. The motivation of managers planning and preparing merger bids will have influenced the construction and nature of their initial bid, and any signs of motivation will be present at the initial bid stage. By only looking at events before the waived through or referral decision, all the cases are examined at the same stage of

the regulatory process. Investors will have formed a view of the merits of each merger, taking account of uncertainty about the remaining steps of the process.

The Tests

Three types of test were used to categorise the capital market's perception of the motivation for each merger, namely:

1. Average gains for bidder, target and the total gains for the combined¹¹ (merged) firm were calculated.
2. The proportion of cases having positive gains being different to those expected by chance was identified (i.e. using a Binomial distribution test of 50%).
3. The relationship between bidder and target gains and between target and combined gains was investigated.

The different groups of mergers, based on final regulatory decisions, were examined using these three tests. In addition the groups were divided into positive and negative combined gains subgroups and re-examined using the tests. The aim was to reveal information that would allow Hubris to be differentiated from Synergy in the positive combined gains group and Managerialism in the negative combined gains group.

For all the cases, for reasons already explained, the gains were calculated based on the abnormal returns from the day before the initial bid to two days before the referral/waive through announcement, taking only bid related events into account. For readers interested in the detailed development of the propositions tested a full discussion can be found in Appendix B. However the following is an intuitive discussion of the basis on which the tests are formed.

The propositions allow tests to identify patterns of abnormal shareholder gains of the target, bidder and the combined firm for each merger case. This allows the share price changes produced in market trading to be used to categorise motives for mergers, as perceived by the capital market. By considering the Synergy, Managerialism and Hubris theories separately, it is possible to develop a set of linked propositions based

¹¹ Combined gains were calculated as the weighted average of target and bidder percentage daily gains based on the target and bidder market values on the same day i.e. $\frac{((G_b M_b) + (G_t M_t))}{(M_b + M_t)}$.

on the characteristics of each theory. For example, in the Synergy theory the motivation is to create value for shareholders. When the capital market perceives that a merger is likely to create Synergy, share prices will respond to the value perceived to be created. In the case of Synergy this is reflected in an expectation that both the target firm (because a premium is paid by the bidder) and the combined firm (because value is created overall) will show positive abnormal gains on average. By contrast if the capital market perceives a deal is being driven by Managerialist motives and that value will therefore be transferred from the acquirers' shareholders to managers, a positive abnormal gain would be expected for the target firm's shareholders, on average, because the bidding management is willing to pay a premium to acquire the firm. However, a loss would be expected for the combined company, on average, because value is being transferred from acquirers' shareholders to managers. In effect, any likely synergies are viewed in the stock market as being insufficient to fund managerial rents, transaction costs and the bid premium for the target firm. By comparing the expectations for Synergy to Managerialism, we find that the sign of the combined gains provides a differentiating test. In the case of Hubris, we can conclude that we would expect the abnormal gains for the target company's shareholders to be positive but the combined gains would be zero, on average, due to the random nature of the valuation errors being made.

In Appendix B a detailed set of propositions (P1 to P7) for testing are developed based on the above logic and a summary of the expected relationships is set out in Table 1. This table shows the interpretation placed on the results of each test on each of the subgroups of mergers within the database. This table lists the tests used as A to P and these letters are used to assist discussion of the results below.

(Table 1 here)

Figure 2 shows how the data groups are sub divided for testing based on the propositions P1 to P7. The groupings for categorisation of the results, based on the decisions of the competition authorities, are summarised in figure 3.

(Figures 2 and 3 here)

The Results

The results are discussed in three parts. Firstly, the results for all of the merger cases taken together are examined for market perceptions of Synergy, Hubris or Managerialism motivations by comparing the results in table 2 with the summary of expectations in table 1. Cases with positive combined firm gains are similarly examined to distinguish between Synergy and Hubris in table 3. Finally, only cases with negative combined firm gains are examined to distinguish between Hubris and Managerialism, in table 4. All of the results are summarised in table 5, conveniently allowing comparisons between groups.

Table 2 provides the descriptive statistics for the tests on all of the merger cases included in the study. The results show significant positive combined gains except for the group of mergers that were “prohibited” after referral to the MMC/CC. This grouping showed a small non-significant gain. From our expectations (table 1, line A), these results indicate that the “waived through”, “referred completed”, “laid aside”,¹² and “allowed not completed” groups showed market perceptions of Synergy. The “prohibited” group showed evidence of Hubris. Although the result for the prohibited group had a positive sign, the coefficient value is low and the result was statistically insignificant at the 10% level or better.

(Table 2 here)

Bidder company gains (table 2, line B) were smaller and non-significant for all of the merger groups except for the “prohibited” group, which showed a significant loss of 3.7%. Comparing these results with our expectations (table 1, line B) again indicates that Synergy predominates in all of the merger groupings, except for those cases which were eventually prohibited. The “prohibited” cases indicated perceptions of Hubris or Managerialism. Target company returns (table 2, line C) were all

¹² “Laid aside” is the term used by the competition authorities for mergers which are abandoned after a referral to the MMC/CC.

significantly positive, ranging from gains of 16% to 35%. However, as a positive return is expected for all motivations (table 1, line C), this test does not differentiate between motives and will not be considered further.

The proportion of cases with positive combined gains (table 2, line D) is significantly greater than that which might arise by chance (i.e. significantly greater than 50% using a Binomial test) for “referred completed” and the “laid aside” groups. The proportion of positive gains equal to those expected by chance (i.e. not significantly different to 50%) was found in the “waived through”, “prohibited” and “allowed not completed” groupings. Comparing these results with expectations (table 1, line D) indicates Synergy in “referred completed” and “laid aside” groups, and Hubris is indicated in the “waived through”, “prohibited” and “allowed not completed” groups.

The relationship between target and bidder gains (table 2, line E) was not significant for any of the groups of mergers. Comparing this result to our expectations (table 1, line E) indicates evidence of Synergy in all groups. The relationship between target and combined gains (table 2, line F) is significantly positive for the “waived through” and “prohibited” groups, indicating Synergy when compared to expectations (table 1, line F). The “referred completed”, “laid aside” and “allowed not completed” groups did not show a significant relationship, indicating Hubris when compared to expectations (table 1, line F).

The indications of motivation resulting from comparison with expectations in table 1 are summarised in table 5 below. Evidence of Synergy is clearly present, but also there is evidence of Hubris as a merger motivation. Only the “prohibited” group of mergers showed any indications that Managerialism was the perceived motive. We now consider the results for particular groupings of mergers in more detail.

Positive combined gains: Synergy v Hubris?

The Synergy Hypothesis proposes that mergers will only take place if value is created by the merger, as indicated by positive combined gains for the bidder and target companies. When mergers are motivated by Synergy in the presence of Hubris, valuation errors are made which reduce these combined gains. By examining only

cases with positive combined gains, it is possible to test for evidence of Synergy alone and Synergy in the presence of Hubris. The differentiating tests can be seen from Table 1 lines G, I, J, K, L, and M.

Table 3 gives the results for the positive combined gains cases, again grouped by regulatory decision. From the expectations in table 1, we expect bidder gains to be positive when motivated by Synergy alone and by Synergy in the presence of Hubris. However, if the Hubris cases are dominant in this positive combined group, bidder gains can fall to zero or be negative. Our results for bidder gains (table 3, line G) indicate a positive gain for “waived through” and “referred completed” cases, and a non-positive gain for “prohibited”, “laid aside” and “allowed not completed” mergers. Comparing these findings with our expectations (table 1, line G), we can conclude that investors perceived that Synergy alone or Synergy in the presence of a minority of Hubris cases motivated the “waived through” and “referred completed” groups. However, stronger evidence of perceptions of Hubris dominating in mergers existed in the “prohibited”, “laid aside” and “allowed not completed” groupings.

(Table 3 here)

Target gains (table 3, line H) are significantly positive for all of the merger groupings, ranging from almost 22% to 38%. However this test does not allow us to differentiate between Synergy and Hubris (table 1, line H). Examining the proportion of cases with positive bidder gains (table 3, line I) shows “waived through” and “referred completed” groups have proportions significantly greater than 50% (i.e. significantly greater than would occur by chance), supporting evidence of Synergy as the dominant motivation (table 3, line I). “Prohibited”, “laid aside” and “allowed not completed” groups had proportions not significantly different to 50%, supporting evidence of Synergy in the presence of Hubris (table 3, line I).

Closer examination of the relationship between target and bidder gains allows indications of Hubris to be detected. For all the cases in this positive combined gains group, the relationship between target and bidder gains (table 3, line J) is non-significant, indicating Synergy motivation in the presence of Hubris (table 1, line J).

By sub-dividing the group into positive and negative bidder gains groups and examining their target and bidder relationships, we are able to detect Hubris if the relationships are significantly different. When Hubris is present, we expect the negative bidder gains subgroup to have a negative target to bidder gains relationship and be significantly different to the positive subgroup. If the relationships of the positive and negative sub-groups are not significantly different, Hubris is not present. Comparing results (table 3, lines K & L) with our expectations (table 1, lines K & L), we find evidence of Synergy in the “waived through”, “prohibited”, and “laid aside” groups, and evidence of Synergy in the presence of Hubris in the “referred completed” and “allowed not completed” groups.

Finally, we examine the relationship between target and combined gains. Comparing results (table 3, line M) with our expectations (table 1, line M) we find all groups show evidence of Synergy coexisting with Hubris.

Negative combined gains: Hubris v Managerialism?

We would expect to find evidence of either Hubris or Managerialism in the negative combined gains group. Bidder gains and target gains (table 4, lines N & O) in this negative combined gains group are as expected (table 1, lines N & O), but the tests do not differentiate between Hubris and Managerialism. Bidder gains (table 4, line N) are all significantly negative from -19.6% to -5.3%. Target gains (table 4, line O) are all significantly positive, between 5.6% and 20.2%.

(Table 4 here)

The test to differentiate between Hubris and Managerialism is the relationship between target and combined gains. Our results for this test (table 4, line P) show no significant relationship except for the “prohibited” group, where the result is significantly positive. A comparison of the results with expectations (table 1, line P) indicates evidence of Hubris. However, no evidence of Managerialism was found by this test in the negative combined gains group.¹³

¹³ The significant positive result for the negative combined gains of the “prohibited” group is not consistent with our original expectations. Whereas in Managerialism value is not created but simply

A comparison of motivations between the groups.

Using the above set of tests and comparing results with expectations allows us to identify market perceptions of the motivation for mergers in each group of the merger cases studied. The results of the tests are summarised in table 5 and show the motivation appropriate to each test result (table 5, lines A to P). It is possible that each group of cases will contain a mixture of motivations. In an environment of multiple motivations in each group, it is to be expected that the test results will show a range of motivations present in each merger grouping.

(Table 5 here)

A method of scoring is therefore adopted, counting each motivation detected. A raw score is calculated for each group by counting the number of instances each motivation was found in the test results shown in table 5. These raw scores are converted to a percentage score, representing the number of instances found as a percentage of the maximum number of instances possible for that motivation (maximum of 10 for Synergy, 6 for Hubris, 5 for Synergy plus Hubris, and 6 for Managerialism). These percentage scores form a profile for each group and are shown in the bottom section of table 5. Also, the percentage score profiles for the groups are shown graphically in figure 4.

(Figure 4 here)

From the percentage scores in table 5 and figure 4, clear differences can be seen between the profiles of the merger groups studied. The “waived through” group is clearly dominated by Synergy, though evidence of Hubris is also present. The

transferred from the bidder to the target shareholders, we expected an inverse relationship between target and combined gains. The only other theoretical cause of negative combined gains is Hubris. The primary expectation for Hubris, because of its random nature, is that no relationship exists between target and combined gains. However a non-negative relationship would also exclude Managerialism. Therefore, in the presence of Hubris, in the negative combined gains group our expectation could be extended from no relationship to a non-negative relationship. On this basis, we can reasonably interpret the positive relationship found as evidence of Hubris. As the result is non-negative, it cannot be interpreted as evidence of Managerialism.

“referred completed” group is less dominated by Synergy and contains greater evidence of Hubris. In this group both Synergy and Hubris clearly coexist. The level of Hubris in both the “waived through” and “referred completed” groups is similar and neither of these groups shows evidence of Managerialism.

The “prohibited” group shows the lowest indication of perceived Synergy alone, with evidence of Hubris alone and coexisting with Synergy where it was the dominant motive. The “prohibited” group was the only group to show any evidence of Managerialism, although this result was weak. The “laid aside” group had a similar profile to the “referred completed” group, but with slightly less evidence of Synergy and more of Hubris. Finally, the “allowed not completed” group showed evidence of the lowest level of Synergy, the highest level of Hubris, and was dominated by cases where Synergy and Hubris coexisted.

Discussion and Conclusions

This paper has considered the stock market’s perceptions of the motivations for mergers and the possible impact of competition policy by studying the effect on share prices of the merging firms. In summary, the research results suggest that during the study period investors perceived that Synergy dominated as the motivation for mergers amongst those mergers “waived through” by the OFT. Amongst those mergers referred to the MMC/CC by the OFT for a full competition investigation, the results are consistent with the “referred completed” group being motivated by Synergy and by Synergy coexisting with Hubris. Interestingly, Hubris dominated the three groups of merger cases where the deals were not completed. However, this may reflect the difficulty for the capital market in identifying Hubris from Synergy given Hubris is an intermediate category between Synergy and Managerialism.

The absence of perceptions of Managerialism as the motivation for mergers in the research results stands in stark contrast to the findings of Berkovitch and Narayanan (1993) and Seth et al. (2000), where both found evidence of Managerialism using broadly similar methods relying on investors’ perceptions. The difference in findings

may be explained by the different data sets used and by the fact that the US studies were based on gains from bid to close for completed mergers and would therefore include the effects of auctions when bids became competitive. Neither Berkovitch and Narayanan nor Seth et al. were concerned specifically with mergers subject to competition policy vetting. In this study we were concerned with the effects of competition policy on merger motivation and therefore with both completed and non-completed bids.¹⁴ The studies also include different time periods with our study using data on more recent mergers. As capital markets become more competitive, it is possible that the opportunity for Managerialism decreases. This would be an interesting area for future research.

Two major points of interest can be drawn from the results of this study in addition to the finding on the absence of Managerialism. Firstly, Synergy is well represented as the perceived motivation for mergers, but it does decline in these cases that were referred for inquiry by the OFT to the MMC/CC or which ultimately failed to be completed (“prohibited”, “laid aside” or “allowed and not completed” by the bidder). The dominance of Synergy may be linked to the dominant culture of “focus” over the study period. Earlier studies covered a period where a culture of conglomerate mergers was fashionable. However the methodology used in this study does not allow testing for multiple variables (e.g. focus, relatedness, size or time trends) in addition to the motivation factors, so this may be an area for future research using different methods. What the study does show is that the more that a merger bid was perceived by the stock market to be motivated by Synergy, the greater were its chances of proceeding through the competition regulation process without impediment during the study period. Secondly, the role of Hubris is important. As Synergy declines, Hubris increases. When account is taken of its ability to coexist with Synergy, it is a major factor in reducing value creation during mergers. In some groups where it co-exists, the evidence suggests that Hubris may dominate over Synergy.

¹⁴ To investigate if the different results might be due to using initial bid results rather than full bid results for completed deals, as a check full bid results were used for the merger deals in this study. No evidence of Managerialism was found in these completed cases when the full deal was taken into account (for reasons of space these results are not reported here but can be obtained from the authors). This finding suggests that the use of gains from the initial bids only does not explain the relative lack of evidence of Managerialism in this UK-based study compared to the earlier US studies

Overall, the study findings suggest that in the UK between 1989 and 2003, mergers subject to scrutiny by the competition authorities were considered by capital market investors to be mainly motivated by Synergy seeking behaviour. However they also perceived a degree of Hubris to be present. Insofar as investor perceptions were correct, this means that the mergers analysed were mainly driven by value creation motives. Where value was destroyed, it appears to have been more by accident (Hubris) than managerial conspiracy (Managerialism). Interestingly, the few cases where the capital market perceived Managerialism to be the dominant motive, the mergers were prohibited by the regulatory process on competition grounds.

In the prohibited merger cases the MMC/CC would have found evidence that the mergers would be against the public interest, even though synergies may be significant in some mergers if allowed to proceed. Why then should our findings show the prohibited group of cases were initially perceived as dominated by Hubris rather than pure Synergy? Is this an artefact of the methodology and an aberration of the lens through which we are interpreting motivation, or is there an explanation of deeper significance? Hubris is considered to be present when a bidder's management believes merger benefits are present and realisable at a level greater than the publicly available facts might support. For example, this could occur when the bidder has limited information on the target during the bid process, and over-optimistic valuation judgements are made. In these circumstances, the capital market could arrive at different conclusions to the management of bidding companies regarding the degree of value likely to be created by the mergers. This difference of opinion is reflected in the pattern of bidder and target firms' share price movements and gains following announcement of the merger. The reported perception of Hubris in prohibited cases is consistent with bidding firms having management who are over-optimistic about the benefits of the merger *and* underestimate the likelihood of regulatory intervention. Such over-optimism about the degree of anticipated regulatory intervention could arise, for example, from taking inadequate professional advice during bid preparation, ignoring professional advice, or over-confident opinions by the bidder of their persuasive abilities - "we will worry about it later if it happens" or "they wouldn't dare stop this deal because it's a special case...". Our finding of Hubris in prohibited cases is consistent with over-confident and unrealistic assessments by managers of

their ability to persuade the regulators that the merger is not anti-competitive. This complements their misjudgement about the benefits of the merger for shareholders.

In the UK, competition policy has been based on preventing mergers where there would be a detrimental effect on the public interest and more recently where mergers can be expected to lead to a substantial lessening of competition. It is not the role of the OFT and the MMC/CC to protect shareholders from ill-founded mergers that lead to a reduction in shareholder value. The competition authorities are not concerned with policing mergers for Hubris and Managerialism. Nevertheless, our findings suggest that, *as a by-product*, the competition regime may have this effect. The almost universal presence of Hubris in the initial bids does suggest that the merger process is error prone from the outset. However, in some of the groupings where Hubris was suspected, the mergers were not completed i.e. they were withdrawn. It is possible, therefore, that because a competition inquiry by the OFT and especially by the MMC/CC delays the conclusion of a merger and turns the spotlight on the merger, the effect is to reduce the prevalence of Hubris and Managerialism. In particular, during a competition inquiry managers are asked to provide much information about the merger and its rationale, seek advice from consultants (legal, economic and financial) and are accountable to major shareholders for the outcome of the inquiry. It is probable, therefore, that the competition inquiry provides time and the opportunity for managers to rethink the case for the merger and to unearth errors in previous calculations and rationales for the merger. In this sense, the competition inquiry process may provide an unintended opportunity to remove the worst features of Hubris and Managerialism in mergers.

Finally, the study also demonstrates that mistakes are present in the initial bids and that it is hubris rather than managerialism that explains the disappointing performance of many mergers. This suggests that management needs to become more skilled in undertaking merger deals, which implies more training in mergers for senior management. Future research could usefully look at skill and process deficiencies in merger teams, particularly at the pre-bid stage. We also recognise that the “sample” used was fairly small reflecting the small number of mergers scrutinised by the competition authorities in the period concerned. Further research should replicate the

study using data from countries such as the USA, where a larger sample size may be available.

Appendix A: Waive Through Group Sample Stratification and List of Mergers Studied.

**Waived Through Sample Stratification –
Jan 1989 to Mar 2003**

Year	Qualifying cases less confidential guidance cases (Note 1)	References to the MMC/ CC (Note 1)	Cases Waived Through (Note 1)	% of total cases Waived Through for all years	Sample based on annual Cases Waived Through: 0 to 60 = 0 61 to 180 = 1 181 to 300 = 2
		Total references			
1989	249	14	235	9.78	2
1990	239	25	214	8.91	2
1991	168	7	161	6.70	1
1992	104	10	94	3.91	1
1993	151	3	148	6.16	1
1994	155	8	147	6.12	1
1995	203	9	194	8.07	2
1996	146	14	132	5.49	1
1997	165	10	155	6.45	1
1998	224	8	216	8.99	2
1999	219	10	209	8.70	2
2000	171	14	157	6.53	1
2001	173	10	163	6.78	1
Jan 02/ Mar 03	199	21	178	7.41	1
Jan 1989 to Mar 2003	2566	163	2403	100	19

Note 1. Source: Office of Fair Trading: Annual Reports

List of the merger cases included in the study

Bidder	Target	Bid date	Bidder	Target	Bid date
Waived through cases			Referred completed cases		
Priest Marians Hldgs	Local London Grp	21-Feb-89	GEC	Plessey	16-Nov-88
GEC	Metro-Cammell	26-May-89	Siemens	Plessey	16-Nov-88
TT Group	Crystalate	30-Mar-90	Coats Viyella	Tootal	12-May-89
Ass British Foods	British Sugar	06-Jul-90	Atlas Copco	Desoutter	09-Aug-89
Whitbread	Grand Metropolitan	31-Oct-91	Blue Circle	Myson	02-Aug-89
HSBC	Midland Bank	17-Mar-92	Lloyds Chem	Macarthy	16-Aug-91
Albert Fisher	Hunter Saphir	21-Jan-93	Hillsdown	Asstd British Foods	16-Sep-91
Booker Marine	Harvester Intl.	19-Oct-94	Allied Lyons	Carlsberg	22-Oct-91
Badgerline	GRT	04-Apr-95	Service Corp Int	Plansbrook Group	02-Sep-94
United News & Media	Blenheim	15-Oct-96	GEC	VSEL	28-Oct-94
Scottish Media Group	Grampian TV	10-Jun-97	Lyonaise	Northumbria Water	06-Mar-95
Texas Utilities	Energy Group	03-Feb-98	GEHE	Lloyds Chemists	07-Feb-96
Wassall	TLG	10-Sep-98	Robert Wiseman	Scottish Pride	03-Jun-96
IMI	Polypipe	15-Apr-99	P&O	Stena	03-Oct-96
WH Smith	Hodder Headline	24-May-99	Tomkins	Kerry	17-Jan-98
British Energy	National Power	17-Nov-99	Vivendi	BSkyB	07-Jun-99
Silentnight	Cornwell Parker	25-Sep-00	NTL	C&W Communications	19-Jul-99
Dairycrest	Uniq	29-Sep-02	Reed Elsevier	Harcourt General	27-Oct-00
Celltech	Oxford Glycosciences	26-Feb-03	Granada	United News & Media	08-Feb-02
Laid aside cases			Group4Falk	Wackenhut Corporation	08-Mar-02
Tate & Lyle	Berisford	19-Mar-90	Carlton	Granada	16-Oct-02
Glynwed Int	Alumasc Grp	20-Apr-90	Prohibited cases		
Vishay	Crystalate	03-May-90	Kingfisher	Dixons	06-Dec-89
Tarmac	Steetley	02-Dec-91	Tate & Lyle	British Sugar	07-Sep-90
Lloyds	Midland	28-Apr-92	PowerGen	Midlands Electricity	18-Sep-95
Whitbread	Allied Domecq	04-May-99	National Power	Southern Electricity	02-Oct-95
Hilton Grp	BSkyB	12-Jul-01	General Utilities	Mid Kent Holding	21-Dec-95
Allowed not completed cases			SAUR	Mid Kent Holdings	21-Dec-95
Yale Valor	Myson	21-Jul-89	Wessex Water	South West Water	06-Mar-96
Unichem	Macarthy	11-Jul-91	Severn Trent	South West Water	21-Mar-96
British Aerospace	VSEL	12-Oct-94	BSkyB	Manchester United	07-Sep-98
Unichem	Lloyds Chemists	18-Jan-96	Lloyds-TSB	Abbey National	05-Dec-00
Pacificorp	Energy Group	11-Jun-97			
Carlton	United News & Media	26-Nov-99			

Appendix B: Development of the propositions used and tested to categorise the capital market's perception of motivations.

As the Synergy hypothesis involves creation of wealth by combining the two firms, we would expect the target firm to capture some of the gains. We would expect a positive relationship between target gains and combined gains. The value gain available for the bidder will depend on the level of competition for the target firm, but we would not expect bidders to continue with their bid when Synergy is the motive if the premium required by the target was greater than the value created, which would result in transfer of value from bidder firm to target firm. We would expect a non-negative relationship between target and bidder gains. On average, where Synergy is the motivation we expect positive combined gains, positive target gains, and non-negative gains for bidders. The proportion of cases with positive combined gains should be higher than expected by chance. These expectations are summarised as:

P1. *Where mergers are primarily motivated by Synergy*, in the full group of mergers in the data base the expected outcomes are:

- a) there will be positive combined gains on average in mergers
- b) there will be non-negative gains on average to bidders
- c) there will be positive gains on average to targets
- d) the proportion of mergers with positive combined gains will be higher than expected by chance
- e) there will be a non-negative correlation between target gains and bidder gains
- f) there will be a positive correlation between target gains and combined gains.

P2. *Mergers with positive combined gains are motivated by Synergy*. Therefore, for the positive subgroup of mergers the expected outcomes are:

- a) there will be positive gains on average to bidders
- b) there will be positive gains on average to targets
- c) the proportion of mergers with positive bidder gains will be greater than expected by chance
- d) there will be a positive relationship between target gains and bidder gains and no difference in this relationship between
 - the sub group of bidders with positive gains and,

- the sub group of bidders with negative gains.
- e) there will be a positive relationship between target gains and combined gains

Since the Hubris hypothesis proposes that mergers entail nothing more than a transfer of value from the bidder to the target, there should be no correlation between combined gains and other sources of gains. Similarly, there should be no association between gains to bidders and other sources of gains. Hence, the following propositions apply:

P3. *Where mergers are primarily motivated by Hubris*, in the full group of mergers in the data base the expected outcomes are:

- a) there will be zero combined gains on average in mergers
- b) there will be negative gains on average to bidders
- c) there will be positive gains on average to targets
- d) the proportion of mergers with positive combined gains will be equal to that expected by chance
- e) there will be a negative relationship between target gains and bidder gains
- f) there will be no relationship between target gains and combined gains.

Since Synergy and Hubris could coexist and give a positive return, we further divide the mergers into additional sub groups of positive and negative bidder gains. If Synergy is present alone, the relationship between target gains and bidder gains should be the same in both the positive and negative bidder gains subgroup. However, if Synergy and Hubris coexist then we would expect the positive bidder gains subgroup to show a positive relationship between target gains and bidder gains, while the negative subgroup would show a significantly different negative target gains to bidder gains relationship. Therefore:

P4. *Mergers with positive combined gains are motivated by Synergy and Hubris coexisting*. Therefore, for the positive sub group of mergers in the data base the expected outcomes are:

- a) there will be positive gains on average to bidders when Synergy dominates the group of cases

- b) there will be non-positive gains on average to bidders when Hubris dominates the group of cases
- c) there will be positive gains on average to targets
- d) the proportion of mergers with positive bidder gains will be equal to that expected by chance
- e) there will be a non-positive relationship between target gains and bidder gains and: -
 - a positive relationship between target gains and bidder gains for the sub group of bidders with positive gains and,
 - a significantly different negative relationship between target gains and bidder gains for the sub group of bidders with negative gains.
- f) there will be no relationship between target gains and combined gains

P5. *Mergers with negative combined gains from target and bidder companies are motivated by Hubris.* Therefore, for the negative sub sample of mergers:

- a) there will be negative gains on average to bidders
- b) there will be positive gains on average to targets
- c) there will be no relationship between target gains and combined gains.

Where mergers are perceived to be motivated primarily by Managerialism, we would expect value to be destroyed by the bidder management extracting value from their shareholders. In addition, the target management can be expected to try to extract value from the bidder shareholders by seeking to agree terms in the interests of the target management, leading to an expected negative relationship between target and combined gains. This differentiates Managerialism from Hubris because, not having such a relationship with the target management where Hubris is present, there will be no relationship between target and combined gains. We also expect that there will be a negative relationship between target company gains and the bidder company gains. The association should be stronger than that with combined gains since under Managerialism combined losses arise and wealth is transferred from bidders to targets.

P6. *Where mergers are primarily motivated by Managerialism*, for the full group of mergers in the database the expected outcomes are:

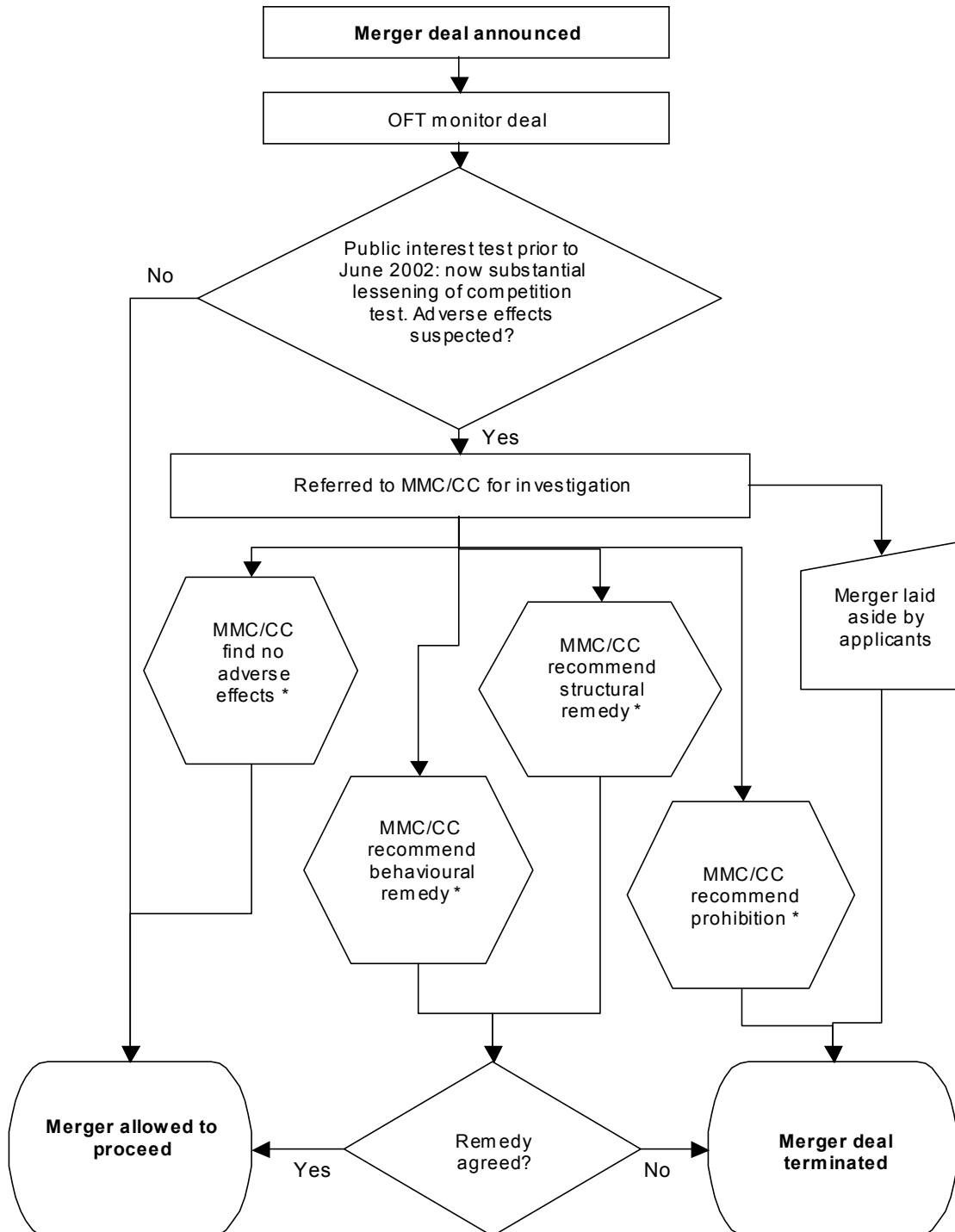
- a) there will be negative combined gains on average in mergers
- b) there will be negative gains on average to bidders
- c) there will be positive gains on average to the targets
- d) the proportion of mergers with negative combined gains will be higher than that expected by chance
- e) there will be a negative relationship between target gains and bidder gains
- f) there will be a negative relationship between target gains and combined gains.

P7. *Mergers with negative combined gains from bidder and target companies are motivated by Managerialism*. Therefore, for the negative combined gains sub-sample of mergers:

- a) there will be negative gains on average to bidders
- b) there will be positive gains on average to targets
- c) there will be a negative relationship between target gains and combined gains.

From the propositions (P1 to P7) above, 16 tests are used. These are shown in table 1, identified as tests A to P for ease of reference in the discussion and results. Of the 16 tests, twelve have proposed results that can differentiate between Synergy, Managerialism and Hubris. Table 1 shows the relationship between the propositions (P1 to P7) and the tests (A to P).

Figure 1
Flow Chart of the UK Merger Referral and Inquiry Process showing Main Decision Events.



* Before 2003 if the Minister disagreed with an adverse decision by MMC/CC, he/she could reject the findings or apply a different remedy. Since June 2003 the CC decision and decision on remedies is normally final.

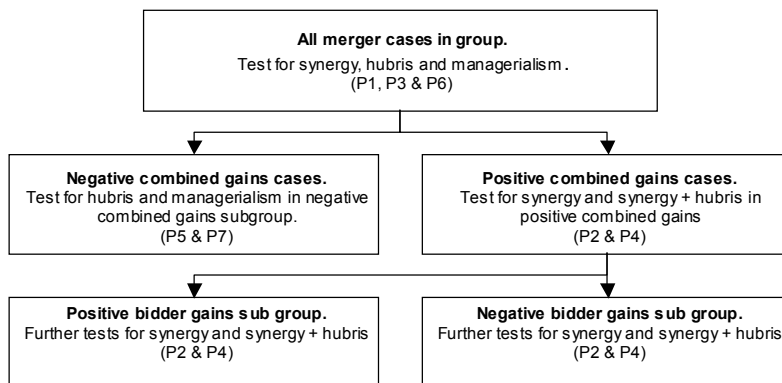


Figure 2. Subdivision of groups for test propositions based on returns

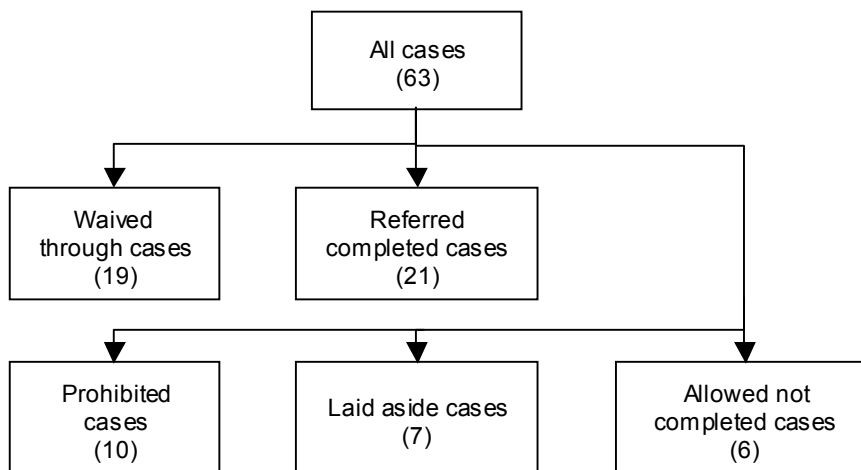


Figure 3. Relationships of groupings used for results categorisation based on regulatory outcome

Table 1. Summary of expectations from motivation theories.

Tests		Propositions			
		Synergy	Hubris	Synergy + Hubris	Managerialism
All the cases					
<i>A</i>	combined gains on average	+ve (P1a)	Zero (P3a)		-ve (P6a)
<i>B</i>	bidder gains on average	non -ve (P1b)	-ve (P3b)		-ve (P6b)
<i>C</i>	target gains on average *	+ve (P1c)	+ve (P3c)		+ve (P6b)
<i>D</i>	proportion of cases with +ve combined gains	>50% (P1d)	50% (P3d)		<50% (P6b)
<i>E</i>	relationship between target gains and bidder gains	non -ve (P1e)	-ve (P3e)		-ve (P6b)
<i>F</i>	relationship between target gains and combined gains	+ve (P1f)	Zero (P3f)		-ve (P6b)
Positive combined returns subgroup of all the cases					
<i>G</i>	bidder gains on average	+ve (P2a)		+ve** (P4a+b)	
<i>H</i>	target gains on average *	+ve (P2b)		+ve (P4c)	
<i>I</i>	proportion of cases with +ve bidder gains	>50% (P2c)		50% (P4c)	
	relationships between target gains and bidder gains	(P2d)		(P4c)	
<i>J</i>	all positive combined gains cases	+ve		non +ve	
<i>K</i>	positive bidder gains subgroup	same as neg		non -ve	
<i>L</i>	negative bidder gains subgroup	same as pos		-ve	
<i>M</i>	relationship between target gains and combined gains	+ve (P2e)		Zero (P4c)	
Negative combined returns subgroup of all the cases					
<i>N</i>	bidder gains on average *		-ve (P5a)		-ve (P7a)
<i>O</i>	target gains on average *		+ve (P5b)		+ve (P7b)
<i>P</i>	relationship between target gains and combined gains		Zero (P5c)		-ve (P7c)

* Indicates a non-differentiating test

** Can be zero or negative if Hubris cases dominate the group

Combined returns are the returns to the bidder and target companies together

Test propositions are referred to thus (Pxy)

Table 2. Test results for all of the merger cases studied

Tests		Waived through	"referred completed"	Referred not completed		
				Prohibited	Laid aside	Allowed not completed
All the cases						
A. combined gains on average (%)		3.2	3.5	0.4	6.2	9.4
	<i>p</i>	0.000	0.002	0.317	0.009	0.000
	sig	***	***	ns	***	***
B. bidder gains on average (%)		-0.2	2.0	-3.7	0.9	-1.6
	<i>p</i>	0.917	0.387	0.000	0.929	0.764
	sig	ns	ns	***	ns	ns
C. target gains on average (see note 1) (%)		16.4	19.3	17.2	23.4	35.1
	<i>p</i>	0.000	0.000	0.000	0.000	0.000
	sig	***	***	***	***	***
D. proportion of cases with +ve combined gains (%) (see note 2)		63.2	81.0	50.0	100.0	83.3
	<i>p</i>	0.359	0.007	1.000	0.016	0.219
	sig	ns	***	ns	**	ns
E. relationship between target gains and bidder gains (β)		0.60	-0.26	1.49	-0.87	0.32
	<i>p</i>	0.370	0.711	0.405	0.394	0.111
	sig	ns	ns	ns	ns	ns
F. relationship between target and combined gains (β)		1.57	1.20	2.84	-0.23	0.86
	<i>p</i>	0.014	0.172	0.001	0.896	0.279
	sig	**	ns	***	ns	ns
number of cases		19	21	10	7	6

Note 1. This test does not differentiate between motivations

Note 2. Binomial test for 50% ratio

*** = significant at the 0.01% level

** = significant at the 0.05% level

ns = not statistically significant at the 0.1% level

Table 3. Test results for positive combined firm (bidder plus target firm) returns

Tests	Referred not completed				
	Waived through	"referred completed"	Prohibited	Laid aside	Allowed not completed
Positive combined returns subgroup					
G. bidder gains on average (see note 1) (%)	3.2	3.9	-2.1	0.9	2.0
<i>p</i>	0.002	0.015	0.072	0.929	0.147
<i>sig</i>	***	**	*	ns	ns
H. target gains on average (see note 2) (%)	22.3	21.8	28.9	23.4	38.0
<i>p</i>	0.000	0.000	0.000	0.000	0.000
<i>sig</i>	***	***	***	***	***
I. proportion of cases with +ve bidder gains (%) (see note 3)	75.0	76.5	40.0	71.4	60.0
<i>p</i>	0.039	0.049	1.000	0.453	1.000
<i>sig</i>	**	**	ns	ns	ns
relationships between target and bidder gains (β)					
J. all positive combined gains cases	0.17	-0.90	0.65	-0.87	-0.27
<i>p</i>	0.841	0.281	0.600	0.394	0.871
<i>sig</i>	ns	ns	ns	ns	ns
K. positive bidder gains subgroup	1.14	-0.29	6.06	-0.18	4.57
<i>p</i>	0.284	0.703	0.356	0.934	0.019
<i>sig</i>	ns	ns	ns	ns	**
number of positive bidder gains cases	9	13	2	5	3
L. negative bidder gains subgroup	-2.10	-10.90	-0.78	-1.58	-5.34
<i>p</i>	0.282	0.033	0.391	0.709	0.013
<i>sig</i>	ns	**	ns	ns	**
number of negative bidder gains cases	3	4	3	2	2
M. relationship between target and combined gains (β)	1.44	0.80	1.17	-0.23	0.99
<i>p</i>	0.146	0.474	0.322	0.896	0.437
<i>sig</i>	ns	ns	ns	ns	ns
number of all positive combined gains cases	12	17	5	7	5

Note 1. This test only differentiates if Hubris cases are dominant in the group

Note 2. This test does not differentiate between motivations

Note 3. Binomial test for 50% ratio

*** = significant at the 0.01% level

** = significant at the 0.05% level

* = significant at the 0.1% level

ns = not statistically significant at the 0.1% level

Table 4. Test results for negative combined (bidder plus target firm) returns

Tests		Referred not completed				
		Waived through	“referred completed”	Prohibited	Laid aside	Allowed not completed
Negative combined returns subgroup						
N. bidder gains on average (see note 1) (%)		-5.9	-5.8	-5.3	na	-19.6
	<i>p</i>	0.000	0.003	0.000	na	0.012
	sig	***	***	***	na	**
O. target gains on average (see note 1) (%)		6.4	8.8	5.6	na	20.2
	<i>p</i>	0.000	0.007	0.000	na	0.001
	sig	***	***	***	na	***
P. relationship between target and combined gains (β)		3.51	5.95	5.69	na	na
	<i>p</i>	0.288	0.206	0.001	na	0.000
	sig	ns	ns	***	ns	ns
number of negative combined gains cases		7	4	5	0	1

Note 1. This test does not differentiate between motivations

*** = significant at the 0.01% level

** = significant at the 0.05% level

* = significant at the 0.1% level

ns = not statistically significant at the 0.1% level

Table 5. Summary of the categorisation of managerial motivation by groupings of mergers

Tests	Waived through	"referred completed"	Referred not completed		
			Prohibited	Laid aside	Allowed not completed
All the cases					
A. combined gains on average (%)	S	S	H	S	S
B. bidder gains on average (%)	S	S	H or M	S	S
C. target gains on average (%) (see note 1)					
D. proportion of cases with +ve combined gains (%)	H	S	H	S	H
E. relationship between target gains and bidder gains (β)	S	S	S	S	S
F. relationship between target and combined gains (β)	S	H	S	H	H
Positive combined returns subgroup					
G. bidder gains on average (%) (see note 2)	S	S	H+S	H+S	H+S
H. target gains on average (%) (see note 1)					
I. proportion of cases with +ve bidder gains (%)	S	S	S+H	S+H	S+H
J. relationships between target gains and bidder gains (β)					
K&L. all positive combined gains cases	S+H	S+H	S+H	S+H	S+H
M. pos & neg bidder gains subgroup interpreted together	S	S+H	S	S	S+H
N. relationship between target and combined gains (β)	S+H	S+H	S+H	S+H	S+H
Negative combined returns subgroup					
O. bidder gains on average (%) (see note 1)					
P. target gains on average (%) (see note 1)					
Q. relationship between target gains and combined gains (β)	H	H	H	(see note 3)	(see note 3)
Scores					
Raw scores					
Synergy	7	6	3	5	3
Hubris	2	2	3	1	3
Synergy + Hubris	2	3	4	4	5
Managerialism	0	0	1	0	0
Percentage scores (see note 4)					
Synergy	70	60	30	50	30
Hubris	33	33	50	17	50
Synergy + Hubris	40	60	80	80	100
Managerialism	0	0	17	0	0

S indicates evidence of Synergy, H indicates Hubris, S+H indicates Synergy in the presence of Hubris, H+S indicates Synergy and Hubris with Hubris dominant, M indicates Managerialism, and H or M shows evidence that Hubris or Managerialism or both could be present.

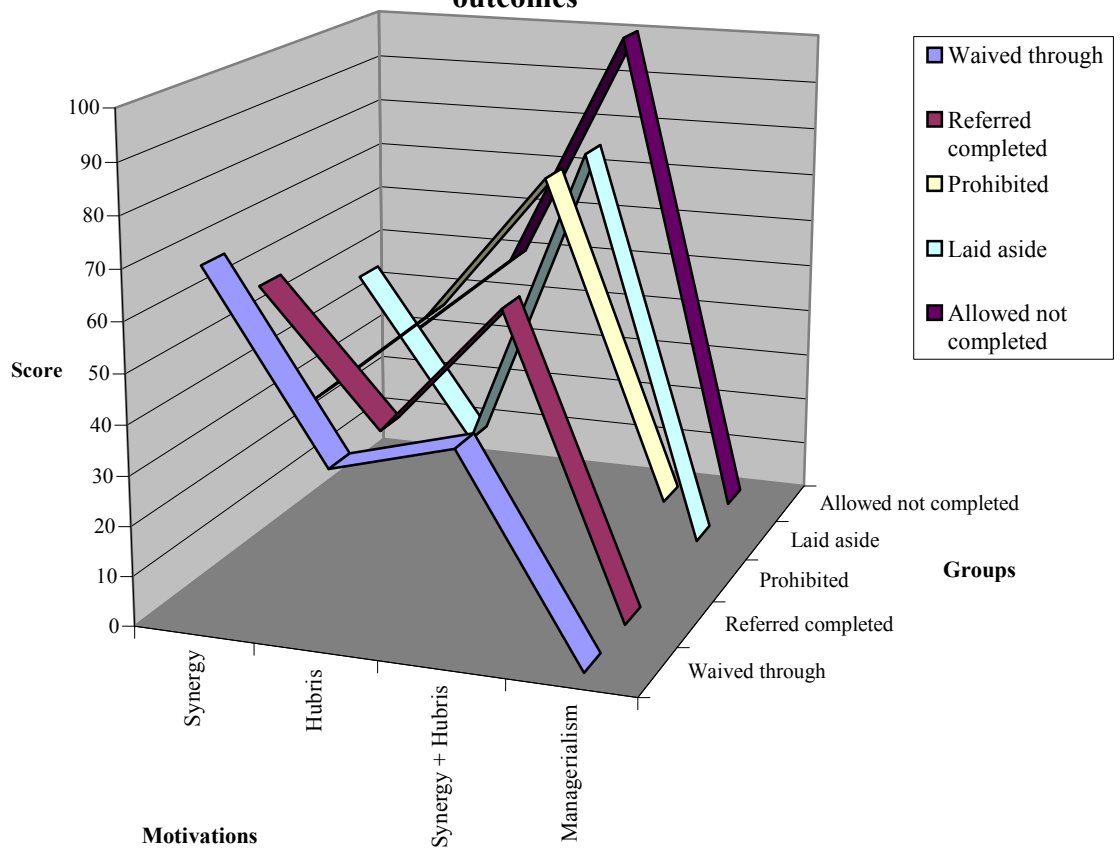
Note 1. This test does not differentiate between motivations and is not included in the scores.

Note 2. This test only differentiates when Hubris cases dominate the group and denoted by H+S, otherwise interpreted as S if +ve.

Note 3. The number of cases in this group was too small for analysis.

Note 4. Calculated by taking the actual points of agreement as a percentage of the maximum points of agreement

Figure 4. Competition policy, managerial motivations and merger outcomes



References

- Arnold, M.F. and Parker, D. (2007) UK Competition Policy and Shareholder Value: The Impact of Merger Inquiries, *British Journal of Management*, **18**, 27-43.
- Berkovitch, E. and Narayanan, M.P. (1993) Motives for Takeovers - An Empirical- Investigation, *Journal of Financial and Quantitative Analysis*, **28**, 347-362.
- Bradley, M., Desai, A. and Kim, E.H. (1988) Synergistic Gains from Corporate Acquisitions and their Division between the Stockholders of Target and Acquiring Firms, *Journal of Financial Economics*, **21**, 3-40.
- Brady, U. and Feinberg, R.M. (2000) An Examination of Stock-Price Effects of EU Merger Control Policy, *International Journal of Industrial Organization*, **18**, 885-900.
- Chiplin, B. and Wright, M. (1988). *The Logic of Mergers: The Competitive Market in Corporate Control in Theory and Practice*, Institute of Economic Affairs, London.
- Clarke, R., Davies, S. and Driffield, N. (1998). *Monopoly Policy in the UK: Assessing the Evidence*, Edward Elgar Publishing, Cheltenham.
- Desai, A., Kroll, M. and Wright, P. (2005) Outside Board Monitoring and the Economic Outcomes of Acquisitions: a Test of the Substitution Hypothesis., *Journal of Business Research*, **58**, 926-934.
- Duso, T., Nevan, D. and Roeller, L. (2003), The Political Economy of European Merger Control: Evidence from Stock Market Data, *CIC Working Paper FS IV 02-34*, *Wissenschaftszentrum Berlin (WZB)*. <http://www.wz-berlin.de/mp/dps/abs/2002/iv02-34.en.htm>, [13 Aug 2007]
- Eckbo, B.E. (1983) Horizontal mergers, collusion, and stockholder wealth, *Journal of Financial Economics*, **11**, 241-273.
- Eckbo, B.E. (1992) Mergers and the Value of Antitrust Deterrence, *The Journal of Finance*, **47**, 1005-1029.
- Forbes, W. (1994) The shareholder wealth effects of MMC decisions., *Journal of Business Finance and Accounting*, **21**, 763-790.
- Franks, J. and Harris, R. (1993) In *European Mergers and Merger Policy* (Eds, Bishop, M. and Kay, J.) Oxford University Press, Oxford, pp. 134-161.
- Grinstein, Y. and Hribar, P. (2004) CEO Compensation and Incentives: Evidence from M&A Bonuses., *Journal of Financial Economics*, **73**, 119-143.

- Holl, P. and Kyriazis, D. (1997) Wealth Creation and Bid Resistance in UK Takeover Bids., *Strategic Management Journal*, **18**, 483-498.
- Jensen, M. and Meckling, W. (1976) Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure., *Journal of Financial Economics*, **3**, 305-360.
- Jensen, M.C., Murphy, K.J. and Wruck, E.G. (2004), Remuneration: Where We've Been, How We Got to Here, What are the Problems, and How to Fix Them., *Harvard NOM Working Paper No. 04-28; ECGI - Finance Working Paper No. 44/2004*.<http://ssrn.com/abstract=561305>, [13 Aug 2007]
- Meeks, G. (1977). *Disappointing Marriage: A Study of the Gains from Merger*, Cambridge University Press, Cambridge.
- Penrose, E. (1959). *The Theory of the Growth of the Firm.*, Oxford University Press, Oxford.
- Roll, R. (1986) The Hubris Hypothesis of Corporate Takeovers, *Journal of Business*, **59**, 197-216 Part 1.
- Salinger, M. (1992) Standard Errors in Event Studies, *Journal of Financial and Quantitative Analysis*, **27**, 39-53.
- Seth, A. (1990) Value Creation in Acquisitions - A Re-examination of Performance Issues, *Strategic Management Journal*, **11**, 99-115.
- Seth, A., Song, K.P. and Pettit, R. (2000) Synergy, Managerialism or Hubris? An Empirical Examination of Motives for Foreign Acquisitions of US Firms, *Journal of International Business Studies*, **31**, 387-405.
- Seth, A. and Thomas, H. (1994) Theories of the Firm - Implications for Strategy Research, *Journal of Management Studies*, **31**, 165-191.
- Seyhun, H.N. (1990) Do Bidder Managers Knowingly Pay Too Much for Target Firms., *Journal of Business*, **63**, 439-464.
- Singh, H. and Montgomery, C. (1987) Corporate Acquisition Strategies and Economic Performance., *Strategic Management Journal*, **8**, 377-386.
- Sirower, M.L. (1997). *The Synergy Trap*, The Free Press, New York.
- Stillman, R. (1983) Examining Antitrust policy towards Horizontal Mergers, *Journal of Financial Economics*, **11**, 225-240.
- Sudarsanam, S. (2003). *Creating Value from Mergers and Acquisitions: The Challenges*, Pearson Educational Ltd, Harlow.
- Sudarsanam, S. and Mahate, A.A. (2006) Are friendly acquisitions too bad for shareholders and managers? Long -term value creation and top management

turnover in hostile and friendly acquirers, *British Journal of Management*, **17**, S7-s30.

Wilks, S. (1999). *In the Public Interest: Competition Policy and the Monopolies and Mergers Commission*, Manchester University Press., Manchester.

Wright, P., Kroll, M. and Elenkov, D. (2002) Acquisition Returns, Increase in Firm Size, and CEO Compensation: the Moderating Role of Monitoring., *Academy of Management Journal*, **45**, 599-608.