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MERGERS AND ACQUISITIONS
DO THEY INCREASE SHAREHOLDER WEALTH?
- *A META-ANALYSIS OF US AND CANADIAN EVIDENCE*

A Thesis submitted to
The Faculty of Graduate Studies and Research
in partial fulfillment of the requirements for the degree of
Master of Management Studies

by
SOLOMON ATO MENSAH, B.Sc. Admin. (Hons.)
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January, 2000

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**MERGERS AND ACQUISITIONS
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submitted by Solomon Ato Mensah, B.Sc. Admin. (Hons.)
in partial fulfillment of the requirements for
the degree of Master of Management Studies

A handwritten signature in black ink, appearing to read "David Jones for the University", written over a horizontal line.

Thesis Supervisor

A handwritten signature in black ink, appearing to read "David K. Lewis", written over a horizontal line.

Director, School of Business

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January 14, 2000

ABSTRACT

This thesis uses the more systematic and independently replicable meta-analytic methodology, rather than the traditional narrative review, to investigate the impact of mergers and acquisitions (M&A) on shareholder wealth in Canada and US. The results show that target shareholders benefit significantly but bidding shareholders do not. US target shareholders earn significantly higher returns than their Canadian counterparts. Though US bidding shareholders earn less than their Canadian counterparts, the difference is not significant. The results did not support the view that published studies systematically yield significantly higher returns than unpublished ones. A review of a number of factors hypothesized in the empirical and theoretical literature to moderate the relationship between M&A and shareholder wealth suggest that whilst some are significant, others are not. It is also found that the impact of these factors - in terms of significance and direction of effect - could differ between bidding and target firm shareholders.

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DEDICATIONS

To the memory of my father, Solomon Kow Mensah, who did not live long enough to see his young son grow into a man

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INTRODUCTION

1.1 Background

Mergers and Acquisitions (M&A) have become part of the daily life of the corporate world. Over 6,800 M&A valued in excess of US\$550 billion, were consummated in the US in 1996 (Mergers and Acquisitions, March 1997). In Canada, over 800 transactions valued at over US\$36 billion were reported for the same year (Mergers and Acquisitions, March 1997). Corporations like Beatrice Companies, US Industries and W.R. Grace and Co. (all of the United States) are reported to have made over one hundred (100) acquisitions each in a period of thirty (30) years (Green, 1990). M&A have not showed much regard for boundaries - they cut across nations, industries and corporations of different sizes, ages and profit (loss) levels. So widespread are M&A that some describe the situation as Merger Mania (Boesky, 1985).

The theory of finance posits that maximization of shareholder wealth should be the goal of every business organization. It is not clear, however, whether maximization of shareholder wealth is the main motivation behind this so-called merger-mania. That, coupled with the fact that the incidence and patterns of M&A have important implications for the structure, development and socio-political life of a country (and with the globalization of the market place, the international community as well), has generated a lot of research interest in the area. Unfortunately, decades of intensive research have not been able to conclusively establish the impact of M&A on shareholder wealth.

Jensen and Ruback (1983) in a comprehensive article reviewing the empirical work presented in over forty (40) papers concluded that "the evidence indicates that corporate takeovers generate positive gains, that target firm shareholders benefit, and that bidding firm shareholders do not lose". Subsequent articles which have come to similar conclusions (i.e., M&A is either wealth-increasing for stockholders of both target and acquiring firms OR for target firms with no significant losses for acquiring firms) include Bradley, Desai and Kim (1988) and Kaplan and Weisbach (1992).

The notion that acquiring firms may not be experiencing significant gains (which appears to be the conclusion in a substantial number of studies) raises the question of why acquiring firms still engage in and often initiate mergers. Moreover, there is substantial recent evidence suggesting that shareholders of acquirers may, under certain circumstances, actually lose. Agrawal, Jaffe and Mandelker (1992) found that "stockholders of acquiring firms suffer a statistically significant loss of about 10% over the five (5) year post-merger period, a result robust to various specifications" (pp.1605). They even described it as an anomaly! It is significant to note that Ruback (1988) who was part of the earlier Jensen and Ruback (1983) study stated that "Reluctantly, I think we have to accept this result - significant negative returns over the two years following a merger - as a fact" (pp. 262). Alberts and Varaiya (1989, pp.134) were more forthcoming with their views when they stated that "the odds are that acquiring firms have not been able to recapture their premiums, let alone create sustainable increments of value for themselves". Warren Hellman even put it in stronger terms when he stated that:

So many mergers fail to deliver what they promise that there should be a presumption of failure. The burden of proof should be on showing that anything really good is likely to come out of one (in Sirower and O'Byrne, 1998; pp. 107)

It is probably this state of affairs that led Agrawal, Jaffe and Mandelker (1992) to conclude that even though mergers are one of the most researched areas in finance, some basic issues still remain unresolved.

1.2 Mission of the Study

Given the background (the large quantity of previous research, the use of disparate samples, variability as to timeframes, differences in legal frameworks, etc. and different conclusions reached by various researchers), there appear to be two (2) options if further research is to yield useful insights.

The first is to conduct completely new or 'improved' research, hoping to achieve a more conclusive finding. Unfortunately, the idea of a single decisive study is, according to Light and Pillemer (1984), only a myth. It is very difficult, if not impossible, to include all relevant factors in a single study.

The second option is to cumulate the findings of existing empirical studies. The strength of this option lies in the fact that each of the research findings would be studied vis-à-vis other findings. Each study (or group of studies) would throw more light on various

aspects of the relationship between M&A and shareholder wealth. Such an analysis would also shed light on what appears to be conflicting findings from various studies as each work would be examined in the context of the others. The results from such a study would therefore potentially enrich knowledge on the subject not with one supposedly decisive ('super') study but by benefiting from all located previous researches. In this study, the second option (cumulating empirical findings across studies) was pursued.

One of the most effective methods for cumulating research findings across studies is meta-analysis. Meta-analysis has been used extensively in the social and medical sciences. Bausell and Purohit (1995) even describe a 'meta-analytic revolution'. Surprisingly, apart from a few instances (e.g. Sahu, Kleiman and Callaghan, 1998), the field of finance has been virtually immune to the *meta-analytic revolution*. In fact, previous reviews of the literature on M&A (e.g. Jensen & Ruback, 1983) have mostly used ad-hoc methods to summarize a selection of studies. In this study, however, the more systematic and comprehensive meta-analytic method was used to cumulate the findings of the large body of existing empirical findings to investigate the impact of M&A on shareholder wealth. The study also attempted to identify variables that moderate the relationship between M&A and shareholder wealth. The methodology is deemed particularly appropriate in this circumstance as there already exists a large body of empirical research.

1.3 Structure of the Thesis

The rest of the thesis is organized as follows. Section 2 presents a literature review of both M&A and meta-analysis. It also locates this study in the context of previous work. The research questions and data are the subject matter of Section 3. The methodology used in the study is presented in Section 4. Section 5 presents the results and analysis of the study. Finally, Section 6 concludes the study.

2.0 LITERATURE REVIEW

2.1 *Literature Review: Mergers and Acquisitions*

According to the theory of finance, the primary goal of every business organization¹ should be the maximization of shareholder wealth. The motivation to attain this goal would, most likely, not arouse controversy if owners were the managers of their own firms. The modern day large firm is, however, characterized by the separation of ownership and control. The firm (particularly the public firm) is often owned by a large number of scattered stockholders whilst control of the firm's resources resides with a small group of managers who hold relatively few, if any, of the firm's stocks. In fact by (as far back as) 1969, only 15% of the largest US non-financial institutions were owned by their managers (Lewellen, 1969). Managers are rational utility maximizers whose interests need not, and in fact generally do not, coincide with those of owners (Jog and Riding, 1988). There is therefore the possibility that managers will not always act in the interest of owners. Several studies suggest that managers maximize their own welfare at the expense of owners (Fama, 1980; Lewellen, 1969). Jensen and Meckling (1976) refer to this as an agency problem. This controversy has made managers' actions (both acts of commission and omission) fertile grounds for research. One such area of interest is mergers and acquisitions.

¹ Refers to profit-motivated businesses

The rate of mergers and acquisitions has been, simply, phenomenal. Between 1976 and 1990, 35,000 completed corporate acquisitions valued at US\$2.6 trillion were reported in the US (Jensen, 1993). In 1996, the US reported a total of 6,828 M&A valued at US\$550.7b (an increase from 2,517 deals valued at US\$210.7b in 1987) (Mergers and Acquisitions, March 1997). Table 1 provides the full 10-year merger completion record. The most active acquirers in 1996 included Corporate Express Inc. (69 acquisitions), US Office Products Inc. (52 acquisitions) and American HomePatient Inc. (40 acquisitions). The largest transaction (by purchase price) was between Walt Disney Co. and Capital Cities/ABC Inc. valued at US\$18.86b.

Table 1: Mergers and Acquisitions in US (1987 TO 1996)

YEAR	NO. OF DEALS	VALUE (US\$b)
1987	2517	210.7
1988	3011	291.3
1989	3825	325.1
1990	4312	206.8
1991	3580	143.1
1992	3752	125.3
1993	4148	177.3
1994	4962	276.5
1995	6209	375.0
1996	6828	550.7

Source: Mergers and Acquisitions, March 1997

The *merger mania* has not been limited to the US alone. In Canada, from 86 deals valued at US\$13.2b in 1987, M&A rose to 815 deals valued at US\$36.7b in 1996 (Mergers and Acquisitions, March 1997), representing an increase of over 840% over the period. The full 10-year merger completion record is provided in Table 2. In 1998, 1,162 transactions

valued at C\$148.1b (approximately US\$99.83²) were reported (Mergers & Acquisitions in Canada, Jan. 1999).

Table 2: Mergers and Acquisitions in Canada (1987 TO 1996)

YEAR	NO. OF DEALS	VALUE (US\$b)
1987	86	13.2
1988	125	18.0
1989	320	20.5
1990	447	15.0
1991	466	13.6
1992	462	9.5
1993	471	14.6
1994	546	25.3
1995	666	34.0
1996	815	36.7

Source: Mergers and Acquisitions, March 1997

The high rates of M&A are not just a North American story. In Europe, for instance, some of the largest transactions (by purchase price) in 1996 (excluding US acquisitions) included Metro International AG (Switzerland) and ASKO Deutsche Kaufhaus AG (Germany) valued at US\$6,325.3m; Sophus Berendsen A/S (Denmark) and BET PLC (UK) valued at US\$3,071.7m and Credit Local de France SA (France) and Credit Communal de Belgique SA (Belgium) valued at US\$3,069.9m (Mergers and Acquisitions, March 1997).

A review of the literature suggests that there are three (3) main motives behind M&A, two economic and one non-economic. The economic motives being inefficient (target) management and synergy and the non-economic, hubris³.

² Converted at the 1998 exchange rate of C\$1:US\$0.6741 (Statistics Canada website)

Proponents of the inefficient target management motive, which is based on agency theory, argue that takeovers offer shareholders a mechanism to replace managers who carry out non-value-maximizing activities with managers who will offer better performance. Jensen and Ruback (1983) extend the argument further in their managerial competition model which sees competing management teams as the primary activists. In that model, the takeover market (or the market for corporate control) is viewed as the market in which alternative managerial teams compete for the rights to manage corporate resources. Samuelson (1970 pp. 505) summarizes this viewpoint when he states that *"Takeovers...represent one of Nature's methods of eliminating deadwood in the struggle for survival. A more open and more efficiently responsible corporate society can result"*.

In a study specifically designed to investigate the disciplinary role of corporate takeovers, Martin and McConnell (1991) find that there is a drastic increase in the turnover rate for the top executives of target firms following successful tender takeovers. They find a strong relation between top executives' turnover and pre-takeover performance. Targets of disciplinary takeovers are poor performers within an industry that is generally doing well. They interpret their results to imply that the corporate takeover market plays an important role in disciplining managers. Choi (1991) also finds that toehold acquisitions are preceded by negative abnormal returns for the toehold targets, implying that poor performance and/or management inefficiency encourage toehold acquisitions that are

³ 'Hubris' is defined as "great and unreasonable pride, often bringing great misfortune to the person who shows it" (Longman Dictionary of Contemporary English, New Edition (1987) Longman Group UK Ltd.)

likely to be followed by value-enhancing control transfers. Canadian target firms also have a deteriorating performance in the months prior to acquisition (Calvet and Lefoll, 1985a): a possible indication that the market is disciplining them for non-value-maximizing behaviour.

The synergy motive is based on the principle of ' $2 + 2 = 5$ '. It posits that M&A are undertaken to obtain gains that result from the commonalities or complementarities between the acquirer and target that enable the combined value of the firms to exceed their value as two (2) independent entities (Hayward and Hambrick, 1997). Thus, unlike the agency motive, the synergy motive assumes that managers of both acquiring and target companies are value-maximizing and would engage in M&A only if that results in gains to their respective shareholders (Berkovitch and Narayanan, 1993). Another significant difference between the disciplinary and synergy motives is that whilst the gains in synergy result from combining the physical operations of the bidder and target firms, gains in disciplinary takeovers can be achieved by changing the non-value-maximizing behaviours of the managers, not necessarily by combining their physical operations. Bradley, Desai and Kim (1988) found that successful tender offers generate significant synergistic gains and lead to a more efficient allocation of corporate resources. Of the three motives, Berkovitch and Narayanan (1993) find synergy to be the most dominant. Eckbo (1986) also reports a significant increase for both target and bidder Canadian firms; a result that can be attributed to synergy in the coming together of the two entities.

The third motive is based on the premise that individual, group and social factors, not efficient strategic decisions, play a key role in takeover decisions (Hayward and Hambrick, 1997). Haspeslagh and Jemison (1991) emphasize this point when they state that acquiring managers' egos frequently outpace their logic during a takeover. Roll (1986) captures this view in his hubris hypothesis. According to the hubris hypothesis, takeovers occur because acquiring managers are infected with hubris or exaggerated self-confidence and perceive themselves as superior (Hambrick and Cannella, 1993). They over-estimate their ability to manage the target firm. Roll himself did not provide a methodology for testing for the presence of hubris, but Hayward and Hambrick (1997) use three (3) observable indicators of CEO hubris to assess the role CEO hubris plays in the acquisition process. The indicators were: a) the acquiring company's recent performance; b) recent media praise for the CEO; c) a measure of the CEO's self-importance; and a composite factor of the three (3) variables. They conclude from their study that CEO hubris plays a substantial role in the acquisition process, particularly in deciding how much to pay. The higher the CEO hubris, the higher the premium. Kaplan and Weisbach (1992) find that the market is able to differentiate between successful and unsuccessful acquisitions at the time they are announced. If the market can, why not the managers? Is their vision blurred by hubris, perhaps? It is important to note the hubris hypothesis is not based on the assumption that managers act consciously against shareholder interests. *"It is sufficient that managers act, de facto, against shareholder interests by issuing bids founded on mistaken estimates of target firm value. Management intentions may be fully consistent with honorable stewardship of corporate assets, but actions need not always turn out to be right"* (Roll, 1986 pp. 214).

A quick recap of the motives discussed in the research literature: in agency motivated takeovers, inefficient managers are replaced with more efficient ones; in synergy motivated ones, the combination of resources results in higher productivity; and in hubris motivated ones, the hubris of acquiring managers tells them, *they* can do it (i.e., manage the target) better! Theoretically speaking, therefore, the three (3) motives are not mutually exclusive. In fact, all three (3) could, and indeed should, lead to improved performance and, by implication, benefit both acquiring and target firm shareholders. Huge premiums are paid by acquirers in pursuit of their targets. Between 1976 and 1990, premiums in the US averaged 41%, with many over 100% (Jensen, 1993). In the words of Hayward and Hambrick (1997, pp. 103) *"Premiums underscore acquiring managers' convictions that the target's pre-existing stock price inadequately reflects the value of the firm's resources and its prospects and that in the right hands – their hands – more value can be created."* Warren Buffet (in Hayward and Hambrick) puts it in a more artistic way when he says corporate acquirers perceive themselves as beautiful princes whose kisses can turn toads into handsome princes. We have observed many kisses. The question is, how many handsome princes have we observed?

In a comprehensive review of over forty (40) articles on the market for corporate control, Jensen and Ruback (1983) conclude that corporate takeovers generate positive gains (i.e., combined acquiring and target gains). Subsequent papers that support this view include Berkovitch and Narayanan (1993) who find that about 75% of takeovers in their sample yield positive total gains; Jarrel, Bradley and Netter (1988) who conclude there is

evidence that premiums in takeovers represent real gains not simply wealth redistributions, and Martin and McConnell (1991) who find that, on average, takeovers create value for both bidders and targets. Eckbo (1986) reports a similar result for Canadian bidder and target firms. The gains are not simply due to stock price movements but a result of real improvements in corporate performance (Healy, Palepu and Ruback, 1992). The cumulative result of the above is that takeovers and actions such as increases in block shareholding and toehold acquisitions that are likely to be followed by value-enhancing control transfers have been well received and rewarded by the market (Thomas, 1996 and Choi, 1991). On the other hand, actions, such as dual class recapitalization, that are perceived to hamper takeovers are 'punished' (Jog, Srivastava and Panangipalli, 1996). There have been many suggestions as to the sources of these gains. These include economies of scale, adoption of more efficient production or organizational technology, increased utilization of the bidders' management team, reduction of agency costs by bringing organization-specific assets under common ownership and financial advantages such as the use of under-utilized tax shields, avoidance of bankruptcy costs and increased leverage. After reviewing many of these possible sources of takeover gains, Jensen and Ruback (1983, pp. 47) were compelled to conclude that "... *knowledge of the sources of takeover gains still elude us*".

The fact that knowledge of the source(s) of takeover gains has proved elusive, according to Roll (1986), should not be surprising because aggregate takeover gains either do not exist or are very small and, consequently, insignificant. Roll argues that the supposed takeover gains are merely transfers (through the substantial premium payments) from

acquiring to target firms. Firth (1980, pp. 254) holds a similar view when he concludes that "...*This (i.e., his evidence) supports the view that the stock market expects zero benefits from a takeover, that the gains to the acquired firm represent an 'overpayment' and that the acquiring company's shareholders suffer corresponding losses*". In the Hayward and Hambrick (1997) study, they find that acquisitions tend to damage acquiring shareholders' wealth. The higher the premium paid, the greater the loss (over a one-year post-acquisition period). In a study designed to investigate whether acquiring firms have been able to improve the financial performance of their acquirees to sufficiently recapture the large premiums paid, Albert and Varaiya (1989, pp. 134) conclude that *'the odds are that acquiring firms have not been able to recapture their premiums, let alone create sustainable increments of value for themselves'*. They accuse the acquiring firm managers of over-optimism (making implausible projections), poor analysis (evaluating incorrectly, the implications of plausible projections) or both. Clark and Ofek (1994) also found that mergers were unsuccessful in restructuring distressed firms.

Even for those who believe that M&A result in aggregate gains, there is no unanimity in the magnitude and the division of the gains between the acquiring and the acquired firms. Jensen and Ruback (1983, pp. 5) conclude that overall *"...target firm shareholders benefit and bidding firm shareholders do not lose"*; implying that, on average, acquiring firms do not experience significant wealth changes. Jarrel, Brickley and Netter (1988) also come to a similar conclusion. Martin and McConnell (1991), however, find significant gains for *both* bidding and target firm shareholders. Allen and Sirmans (1987)

find significant wealth increase for acquiring Real Estate Investment Trusts whilst Zhang (1995) also finds significant wealth increases for both acquirers and targets in US bank takeovers. As already stated Eckbo (1986) also finds significant positive abnormal returns for both acquiring and acquired Canadian firms, whilst Burney, Gunay and Barnes (1995) find gains for acquiring Canadian firms.

M&A studies have, mostly, been of an event study nature focusing on returns immediately around announcement days in order to infer the wealth effects of mergers and acquisitions. For instance, many US studies using daily data concentrate on approximately 120 days surrounding the event whilst those using monthly data use up to twelve (12) months post-announcement data (Jog and Riding, 1988). The assumption here is that the markets are efficient and that all future benefits associated with the event are reflected in the immediate share price reaction. Research suggests, however, that the market may not be that efficient (Loughran and Vijh, 1997). This has prompted other researchers to look into the long-term impact of M&A on stockholder wealth. Here too, there has not been much agreement. Whilst researchers such as Jog and Riding (1988)⁴ who use Canadian data, Franks, Harris and Titman (1991) and Healy, Palepu and Ruback (1992) find that M&A are good or, at least, not harmful to shareholder interests, others such as Aggrawal, Jaffe and Mandelker (1992) and Clark and Offek (1994)⁵ report that M&A are harmful to stockholder interests. Loughran and Vijh (1997) report that target shareholders who sell soon after the acquisition effective date gain from all acquisitions

⁴ Jog and Riding report substantial improvement in performance from pre- to post –acquisition period but are unable to establish statistical significance due to the variance of returns

(mergers and tender offers); those who hold on to the acquirers' stocks find their gains diminish, sometimes into negative territory. Similarly, Calvet and Lefoll (1985a), using Canadian evidence, find that all target gains tend to vanish within 12 months following the event month, with several statistically significant losses.

Many studies have suggested that the characteristics of a particular merger or acquisition moderate its relationship with stockholder wealth. The characteristics that have been identified include: bidder's approach (merger or tender)^{6,7}, mode of financing (cash or stock)⁸, level of managerial ownership⁹, number of bidders¹⁰, relatedness of business¹¹, relative size of bidder and target¹², independence of board of directors¹³, successful or unsuccessful¹⁴, foreign or domestic¹⁵ and regulatory changes¹⁶. There is another possible moderating factor raised by Eckbo (1986) but which has not received much attention in the literature. In his view, his conclusion that both bidding and target Canadian firms earn significant gains from takeovers differs from the bulk of US studies which find significant returns to targets but not to bidders. He attributes the difference to unique

⁵ Clark and Ofek attribute some of the poor performance to industry factors

⁶ Please note that all articles cited in footnotes 7-16 can be located in the annotated bibliographies in appendices A and B

⁷ Calvet and Lefoll (1985b); Datta, Pinches and Narayanan (1992); Loughran and Vijn (1997); Travlos (1987)

⁸ Calvet and Lefoll (1985a); Datta, Pinches and Narayanan (1992); Franks, Harris and Titman (1991); Healy, Palepu and Ruback (1992); Loughran and Vijn (1997); Travlos (1987)

⁹ Amihud, Lev and Travlos (1990); Song and Walkling (1993); Stulz, Walkling and Song (1990)

¹⁰ Bradley, Desai and Kim (1988); Datta, Pinches and Narayanan (1992); Franks, Harris and Titman (1991); Jarrel, Brickley and Netter (1988); Stulz, Walkling and Song (1990)

¹¹ Calvet and Lefoll (1985b); Eckbo (1986); Datta, Pinches and Narayanan (1992); Healy, Palepu and Ruback (1992); Sicherman and Pettway (1987)

¹² Clark and Ofek (1994); Healy, Palepu and Ruback (1992)

¹³ Hayward and Hambrick (1997); Cotter, Shivdasani and Zenner (1997)

¹⁴ Davidson III, Dutia and Cheng (1989); Fabozzi, Ferri, Fabozzi and Tucker (1988)

¹⁵ Burnie, Gunay and Barnes (1995); Dewenter (1995) and Kang (1993)

characteristics of the Canadian economy. Is it possible, then, that the effect of M&A on stockholder wealth could differ from country to country?

Lest we conclude there is unanimous agreement on how, if at all, M&A characteristics influence its impact on stockholder wealth, Healy, Palepu and Ruback (1992) conclude that while they found some evidence that the degree of business overlap between merging firms influences post-merger performance, there was little evidence that transaction characteristics have a significant impact. Eckbo (1986) did not find any evidence that firms in overlapping mergers perform significantly better than those in non-overlapping businesses.

Appendices A and B present annotated bibliographies of some of the published works on M&A and shareholder wealth in US and Canada respectively.

In summary, I will quote what Jog and Riding (1988, pp. 235) stated after a review of the M&A literature in Canada and the US: *"the evidence presented in ... Canadian studies seems as contradictory as the evidence based on US data"*.

There is this story about eight (8) or so men who were blindfolded and taken to see an elephant, an animal they had never seen before. When later asked how an elephant looked like, each of them gave an accurate but different description depending on which part of

¹⁶ Burnie, Gunay and Barnes (1995); Calvet and Lefoll (1985b); Bradley, Desai and Kim (1988); Datta, Pinches and Narayanan (1992); Malatesta (1993)

the body he felt. It was not until all the various parts (felt by each of them) were brought together that they had a complete picture of how an elephant looks like. Could it also be that different studies are looking at different aspects of M&A and that there is the need to bring all these aspects together in order to have a complete picture?

2.2 Literature Review: Meta-Analysis

The inconclusive, incompatible and sometimes conflicting state of the literature demonstrated in the previous section is not peculiar to research in mergers and acquisitions. Nor is it peculiar to research in finance. In fact, "virtually every field of science is now pervaded by a relentless cross fire in which the findings of new studies not only differ from previously established truths but disagree with one another, often vehemently" (Hunt, 1997; pp. 1). Addressing the American Psychological Association Convention in 1970, then Senator Fritz Mondale made a statement that equally applies to many, if not all, research domains. He said:

What I have not learned is what we should do about these problems. I had hoped to find research to support or to conclusively oppose my belief that quality integrated education is the most promising approach. But I have found very little conclusive evidence. For every study, statistical or theoretical, that contains a proposed solution or recommendation, there is always another, equally well documented, challenging the assumptions or conclusions of the first. No one seems to agree with anyone else's approach. But more distressing: no one seems to know what works. As a

result, I must confess, I stand with my colleagues confused and often disheartened (in Hunter and Schmidt, 1990; pp. 35).

There has not been much change since that statement was made. Rather, with the explosion in the number of research activities and advances in technology that have made access to research findings relatively easy, the frustrations have gotten worse. In the necessary attempt to resolve the inconsistencies in the state of the literature, the preferred option by most researchers has been to conduct new (primary) studies. Researchers would normally identify what they perceive as deficiencies in existing studies (in such areas as methodology, data and analysis), correct them (at least attempt to) and conduct their 'improved' research.

Unfortunately, as Cook (1992) points out, it is difficult, if not impossible, to derive conclusive knowledge from any single study, no matter how well designed and intelligently analyzed. The inherently probabilistic nature of research findings implies that the results of any single study could have been by chance. Also, each study is conducted within a certain context; "... the causal process that appears so essential at one point or place may prove less important in another. The program that works well with one group under certain conditions may be less effective with another group when the circumstances are a bit different" (Cook, 1992; pp. vii). Moreover, just as "Science is built up with fact, as a house with stone. But a collection of facts is no more a science than a heap of stones is a house" (Jules Henri Poincare in Olkin, 1990; pp. 3), the mere

addition of new studies to the already high number of existing ones does not in itself lead to the creation of a coherent body of knowledge.

Commenting on the state of educational research, Glass (1983) made a statement that aptly describes many, possibly all, research domains today. He stated that "the house of educational research is sadly dilapidated. It is strewn among the scree of a hundred journals and lies about in the unsightly rubble of a half million dissertations" (pp. 397). As a result, many researchers are unable to keep up with current developments in their fields of expertise. Instead, they find themselves in the embarrassing position of knowing less than they have proven (Glass, 1976). The immediate need in this situation is not the addition of more primary studies but the discernment of the current state of knowledge as well as the resolution of existing inter-study differences. Therein lies the importance of a literature review.

A literature review helps summarize existing literature, resolve inconsistencies, and provide direction for future research by identifying research holes and needs. Going back to the analogy in the previous section, primary studies could be likened to the description of the various parts of the elephant; bringing all the various parts together in order to get the complete picture of the elephant could be the role of a literature review.

The method that has traditionally been used for literature review is the narrative review. In this method, the researcher verbally summarizes, analyzes and reconciles the existing

literature in order to draw overall conclusions. Other names for the narrative review include 'literary', 'qualitative' and 'non-quantitative' review.

The narrative review was probably appropriate when there were only a few studies in the various research domains. With the current explosion in research activities¹⁷ coupled with increasing complexity, it is indeed a daunting task to attempt synthesizing literature using the narrative review method. As Hunt (1997, pp. 6) would put it, "...one can only admire those who perform the heroic task of reading scores of often dense, technical and tedious studies and summing up each in a sentence or two". Not surprisingly, the method has been criticized for its inability to properly integrate research findings (Hunt, 1997). Instead, the results presented are merely 'wax and wane' (Kavale, 1995; pp. 351) and 'a pedestrian reviewing where verbal synopsis are strung out in a dizzying list' (Glass, 1976; pp. 4).

The narrative review method has also been criticized for its inability to offer precise estimates of relationships under study. Hunt (1997; pp. 7) refers to that as 'knowledge without measurement'. Phrases such as 'some evidence of a trend', 'a weak relation' and 'a strong relation' are very common in narrative reviews. Lord Kevin (in Hunt, 1997; pp. 7) suggests that:

When you can measure what you are speaking about and express it in numbers you know something about it, but when you cannot measure it,

when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely, in your thoughts, advanced to the stage of science, whatever that may be.

Extreme, though, it sounds, it does raise the legitimate concern that narrative reviews offer only loosely defined terms of relationships that are vulnerable to different interpretations.

Due to the fact that there are no formal rules guiding the performance of a narrative review, the method is highly susceptible to subjectivity (Light and Pillemer, 1984; Egger and Smith, 1997). Even the most trustworthy expert is likely to have a favored conceptualization of a domain, a pet peeve about colleagues or a set of personal acquaintances that are likely to bias his or her judgments of study findings, even if unconsciously (Bangert-Drowns, 1995). This problem could be ameliorated if the review reports contained enough details about the decision rules, procedures and methodologies to permit independent corroboration of conclusions drawn. Unfortunately, this is not so, giving the opportunity for the conclusions to be influenced by prejudice and stereotyping to a degree that would be unforgivable in primary research (Glass, McGaw and Smith, 1981).

¹⁷ Kulik, Kulik and Cohen (1979) estimated that a speed reading researcher who spends about 4 hours a day reading journals would complete about 50 articles a day or 12,500 articles a year; and that would only

It is these non-negligible disadvantages and the need to elevate research synthesis from the realm of mere opinion (Glass, 1976) that gave birth to meta-analysis.

Meta-analysis is a systematic review of studies that uses quantitative statistical procedures to combine, synthesize and integrate information across studies (D'Agostino and Weintraub, 1995).

There are three possible levels of data analysis (Glass, 1976). The first is primary analysis, which refers to the original analysis of data generated in a primary study. The second, secondary analysis, refers to the re-analysis of (original) data for better understanding of the original research question or to generate additional information from the original data. The third category is meta-analysis, which refers to the 'analysis of analysis' (Glass 1976), that is, analyzing the results of primary studies. Unlike primary and secondary analysis, meta-analysis does not require access to primary data. Instead, the results of each study serve as a unit of analysis.

Meta-analysis has two basic goals: combining and comparing (Hall and Rosenthal, 1995). Combining studies refers to summarizing and describing the existing results of research in terms of central tendency. Comparing studies refers to additional analysis that throws light on variability across studies by examining factors that are associated with results of the studies. Comparing studies enables the meta-analyst to test hypotheses that were not tested in the primary studies.

be about 10% of the annual output in many areas of research.

The origin of meta-analysis is generally attributed to Fisher's (1932) work on the combination of p-values. Egger and Smith (1997), however, trace the earliest known use of data pooling to Pearson (1904). It was not until 1976, though, that Glass introduced the term meta-analysis. And, it was Glass' (1976) work that energized efforts at quantitative research integration. Approximately synonymous names for meta-analysis include 'quantitative review' and 'quantitative synthesis'.

Meta-analysis has been received in some circles with skepticism. The renowned English psychologist, Eysenck (1978) contemptuously referred to meta-analysis, specifically Glass' original work, as an exercise in 'mega silliness'. Eysenck believed that if the analytic methods of meta-analysis were to be taken seriously, it would mark the beginning of a passage into the dark age of scientific psychology. He was optimistic, however, that that would not happen¹⁸. A peer reviewer of a meta-analytic work by Harry Cooper which looked at sex differences in conformity wrote that he simply could not imagine any great contribution to knowledge from combining statistical results (in Hunt, 1997). Meta-analysis has also been described as the unacceptable face of a statistician which should be stifled at birth (Oakes, 1986).

¹⁸ Ironically, it was anger at Eysenck and the desire to refute his arguments in a paper on psychology, rather than scientific interest that inspired Glass to originate meta-analysis (Hunt, 1997).

In spite of the war cry for meta-analysis to be stifled at birth, the use and prestige of meta-analysis has grown tremendously in its relatively short history. This is primarily because the method offers several advantages.

One of the major strengths of meta-analysis is that it injects the scientific process into literature review. The method is systematic. Its methods for including or excluding studies, interpreting and evaluating studies as well as drawing conclusions are made explicit. This permits independent replication and corroboration of any conclusions drawn. The importance of this quality derives from the fact that "Replication is the hallmark of science. The objectivity of science does not lie in the careful, conservative or honest nature of individual scientists nor in their ability to purge their subjective, political and social motives. Instead, it is the social aspect of the scientific enterprise - the fact that all claims can be independently tested by other subjective scientists - that imbues science with its objectivity" (Popper, 1945 in Stanley and Jarrell, 1989; pp. 168).

Unlike narrative reviews, meta-analysis is able to offer more precise estimates of the magnitude of effect due to its very quantitative nature. Ambiguous terms such as 'no relationship', 'some relationship', 'significant relationship' and 'non-significant relationship' which are highly susceptible to divergent interpretations are replaced with numerical values.

Also, meta-analysis has a high statistical power. This is especially valuable when effects are small. In such situations, magnitude is not easily visible (Cohen, 1977 in Kavale,

1995) and so good statistical techniques are required to help reveal any existing effects. Cooper and Rosenthal (1980) illustrated this point in their comparison of statistical and traditional review procedures. Whilst the statistical integration detected an overall positive (even though small) effect across the studies examined, the results from the traditional integration procedures were ambiguous.

As the body of research findings continues to grow, its "meaning can no more be grasped in our traditional, narrative discursive review than one can grasp the sense of 500 test scores without the aid of techniques for organizing, depicting, and interrelating data" (Glass, 1976; pp. 4). The proper integration of research findings, therefore, requires the application of the same rigorous statistical techniques used in primary data analysis (Glass, 1976). Being a statistical method, meta-analysis is able to effectively integrate voluminous research findings in a way that the traditional narrative review method cannot. In fact, the accuracy of estimates increases as the amount of available data increases (Preiss and Allen, 1995). Meta-analysis therefore offers the opportunity not only for proper integration (rather than historical summary), but also for a more thorough and exhaustive review of the research domain.

The use of meta-analysis also offers economic benefits. The method is an attractive alternative to an equivalent large, expensive and logistically problematic study (Egger and Smith, 1997). Especially so as resources (including resources for research) become scarce. Rather than regarding inconclusive individual primary studies as intellectual refuse or continuing to generate more replications of the same research, meta-analysis

enables a kind of recycling of previously 'used' studies to yield new insights (Bangert-Drowns, 1995).

In many ways, a meta-analytic review is more than simply the sum of its parts. Here is what Olkin (1990, pp. 6) said:

I like to think of the meta-analytic process as similar to being in a helicopter. On the ground individual trees are visible with high resolution. This resolution diminishes as the helicopter rises, and in its place we begin to see patterns not visible from the ground.

That would seem to constitute the category Hedges (1990) calls the retrospective function: conducting a survey to provide overall conclusions from the available evidence. But in addition to that, meta-analysis has a prospective function. It can give direction to future research by identifying knowledge gaps in existing studies. Moreover, as Miller and Pollock (1995) point out, meta-analysis need not be constrained to the examination of only the effects tested in the original studies. By bringing the studies together, one could test theoretical concepts not examined in the primary studies. Also, since meta-analysis involves the use of studies cutting across different populations, contexts, periods, etc, it is better able to test external validity than primary studies.

As already noted, not everybody is that enthusiastic about the huge praises heaped on meta-analysis (isn't that too much to hope for!). David Sohn sums up the views of the critics when he states that:

It is not reasonable to suppose that the truth about nature can be discovered by a study of the research literature. ... Meta-analysis writers have created the impression, with a farcical¹⁹ portrayal of the scientific process, that the process of arriving at the truth is mediated by a literature review. ... After some critical mass of findings has been gathered, someone decides to see what all of the findings mean by doing a literature review, and thereby knowledge is finally established (in Hunt, 1997; pp. 18).

One major source of criticism against meta-analysis is that it mixes apples and oranges. In other words, the methodology combines studies in which the independent variables, dependent variables and sampling units are very different, rendering them incomparable. Two apples and three oranges make two apples and three oranges, not five appleoranges, even if the individual fruits are of the same size or weight (Greenhalgh, 1998). Any attempt to average their weights, sizes, etc would only yield meaningless figures (Hunt, 1997).

In response to that criticism, Glass (1983) argues that apples and oranges are good things to mix when trying to generalize about fruits. If researchers are willing to generalize over subjects within (primary) studies, why should they be unwilling to generalize over studies? He quips. Glass argues further, that the apples and oranges criticism is at odds with the very nature of research:

¹⁹ It is interesting to note that synonyms for farcical include absurd, ridiculous, ludicrous and silly (source: Thesaurus, Microsoft Word).

The claim that only studies which are the same in all respects can be compared is self contradictory; there is no need to compare them since they would obviously have the same findings within statistical error. The only studies which need to be synthesized or aggregated are different studies. Generalizations will necessarily entail ignoring some distinctions that can be made among studies. Good generalizations will be arrived at by ignoring only those distinctions that make no important difference. But ignore we must; knowledge itself is possible only through the orderly discarding of information. (in Hunt, 1997; pp. 62).

It is important to note, also, that it is by bringing the different studies together and blocking on their various characteristics that gives meta-analysis an edge over primary research in testing for external validity and moderating variables. The word of caution to the meta-analyst, though, is that combining apples and oranges to understand something about fruits may make more sense than combining fruits and humans to understand something about organic matter (Judith Hall in Hunt, 1997; pp. 62).

Related to the apples and oranges criticism is another source of heterogeneity in studies: data quality. By including all relevant studies regardless of their methodological quality as suggested by Glass (1976, 1977, 1983), the results of meta-analysis could be compromised. That is what Eysenck (1978) referred to, and has come to be known in the meta-analytic literature, as Garbage-In-Garbage-Out. The danger of excluding studies on the basis of quality, however, is that it is often not supported by evidence (Glass, 1983)

and is therefore susceptible to bias or claims of bias (Fiske, 1978 in Rosenthal, 1990). 'Bad' studies are often those whose results we do not like (Rosenthal, 1990) or the studies of our 'enemies' (Glass, 1976, 1983; Glass McGaw and Smith, 1981). Glass (1983) recommends that the researcher should investigate the relationship between study quality and study findings. If there is no relationship, then a large database - including all studies irrespective of quality - is preferred to a small database. If a significant relationship exists, the researcher may weight the studies (including zero weighting) so that high quality studies would carry more weight than low quality ones. It is important to show the basis of weighting to enable readers and other researchers assess its reasonableness independently.

Critics have also argued that studies available for analysis will usually be a biased sample of all available studies. The most important cause is publication bias. Since published studies are more readily located than unpublished ones, there is the tendency for meta-analysts to rely solely or mainly on published ones. Published studies tend to be more statistically significant and have larger effect sizes than unpublished ones (Hunter and Schmidt, 1990). This results from the preference of journal editors for studies that report significant results over those that do not. The 'instructions to authors' section of one major journal, for instance, states that "mere confirmation of known facts will be accepted in exceptional cases; the same applies to reports of experiments and observations having no positive outcome" (Egger and Smith, 1998; pp. 62). The more prestigious the journal and the more stringent its review procedures, the stronger the publication bias. This practice is so well known that many researchers do not submit studies with negative findings as they

anticipate rejection. The cumulative effect is that the results of any analysis based solely or mainly on published studies is likely to be upwardly biased.

Bias is, however, not a terribly severe problem if its direction and amount are known as appears to be the case in this situation. Moreover, there is evidence that the effect of publication bias is minimal (Preiss and Allen, 1995). Methods have also been developed to help address publication bias whenever the meta-analyst has reason to believe or suspect that the effect could be large enough to bias the results. The first is Rosenthal's 'file drawer analysis'. This method estimates the number of unlocated ('file drawer') studies averaging null results that would have to exist to bring the significance level for a set of studies to the 'just significant' level, i.e. $p = .05$ (Hunter and Schmidt, 1990). The number required is usually so large that the possibility of its existence is minimal. Whilst useful, the method focuses on significance level at the expense of effect size which is the main statistic in meta- analysis. Orwin (1983 in Hunter and Schmidt, 1990) has also developed a method that estimates how many 'missing' studies averaging null results would have to exist to bring the effect size to a specific level.

Other sources of bias suggested by Egger and Smith (1998) all of which broadly fall under location bias include: 1) English language bias: meta-analyses published in English language journals are often based exclusively on studies published in English; and 2) Database bias: studies published in journals not indexed in one of the major databases are effectively hidden from reviewers and meta-analysts.

Meta-analysis has also been accused of having the potential for mischievous consequences because of its apparent 'objectivity', 'precision' and 'scientism' (Cook and Leviton, 1980). Greenhalgh (1998) calls it the danger of false objectivity in meta-analysis. These concerns have been raised largely because mathematics has long shown that virtually any statement can be made logically 'true' if suitable premises are assumed (Schmidt and Hunter, 1990). Therefore, 'choosing to use quantitative procedures to synthesize studies does not ensure scientific validity. Meta-analysis can be applied incorrectly. The necessary assumptions about data can be inappropriate. Calculations can be in error. And of course, reviewers can misinterpret the meaning of a meta-analytic statistic. Any of these mistakes may threaten the validity of a review' (Cook, 1990; pp. 12). It is therefore important to bear in mind that the explicitness of meta-analysis is merely a symbol of its openness to independent examination and not a symbol of impeccable truth.

Concerns have also been expressed about potential violation of statistical assumptions of independence when multiple effect size estimates and/or tests of significance generated by the same study are used. Whilst some regard the issue of non-independence to be insurmountable and argue against the use of multiple study findings as the unit of study, others argue for less restrictive standards (Bangert-Drowns, 1986). This is a thorny issue that has not been completely resolved. Preiss and Allen (1995) suggest that any use of non-independent data should be recognized but not necessarily avoided. In any case, complete independence will be difficult to attain. As Rosenthal (1990) points out, even if each study yields only one effect size estimate and level of significance, there is still the

possibility that studies conducted in the same laboratory or by the same group of researchers will be more similar to each other than they are to studies conducted in other laboratories or by other research groups.

It is important to note that most of the criticisms raised above against meta-analysis are equally applicable to narrative review, the traditional alternative to meta-analysis. They are less obvious in the latter only because of its less structured and explicit nature (Abrams and Jones, 1995) but that is by no means a mitigating factor. Thus, to the extent that they are problems, they are problems of literature synthesis in general and not limited to meta-analysis alone.

Finally, even though 'it is nearly impossible to overestimate the gains in knowledge that can result from the application of meta-analysis to scientific literature' (Hall and Rosenthal, 1995), it is important to acknowledge that, like any human creation, the method has its own limitations. Perfection, after all, does not belong to the human race.

First, the scope of meta-analysis is limited by the scope of existing primary research. In formulating research objectives, the primary researcher is limited only by how imaginative s/he is, but the meta-analyst can only review topics that have been sufficiently examined by primary research. 'A well formulated set of questions to be answered by meta-analysis is of little use if the problem has not been investigated' (Cook, 1992; pp. 284). Bangert-Drowns (1995) therefore envisions meta-analysts and primary researchers as partners; "The meta-analyst informs the primary researcher about strengths

and inadequacies of current common research methods and about areas of convergence in research findings. Primary researchers, in response, can use these meta-analytic observations to refine their research methods and to confirm and explore areas of convergence. And still each would contribute insights about issues that the other would find hard to investigate" (pp. 311).

Second, the ultimate success or failure of meta-analysis is highly dependent on the expertise and abilities of the reviewer. For, in spite of all its advantages, data analysis is only an aid to thought not a substitute (Green and Hall, 1984). With that in mind, Smith and Egger (1998) have warned people to be wary of the "professional meta-analyst" who moves from issue to issue studying issues outside his/her domain of expertise.

Advances in meta-analysis will also not eliminate the need for narrative review. There is still a role for the 'careful description, process analysis, insight and creativity' (Light and Pillemer, 1984) that narrative reviews offer. Taking an 'either or' position is neither necessary nor productive (Light and Pillemer, 1984). Rather, the reviewer should make the best out of the two because:

Science needs to know its stubborn, dependable, general 'facts', and it also needs data-based, contingent puzzles that push ahead theory. Our impression is that meta-analysts stress the former over the latter, and that many qualitative reviewers stress the latter more than the former (or at least more than meta-analysts do). Of course neither the meta-analyst nor the qualitative reviewer needs to make either prioritization. Each can do

both; and any one reviewer can consciously use both qualitative and quantitative techniques in the same review. Indeed, s/he should (Cook and Leviton, 1980; pp. 468).

2.3 *The Meta-Analytic Revolution and Research in Finance*

"A revolution has taken place in the social and biological sciences - the meta-analytic revolution" (Hall and Rosenthal, 1995; pp. 394).

The meta-analytic revolution started in the social sciences, but its rapid growth has seen it branching into many other fields. Ironically, the number of articles originating from the social sciences, the mother of meta-analysis, now falls short of those originating from the health sciences (Juul, 1995).

In spite of the enormous advantages it could offer to the accumulation of knowledge in a research domain, the meta-analytic revolution has only been barely received in business research in general and financial research in particular.

A search through the UNCOVER database for the period 1988-1998 using the keywords "meta-analysis" yielded 2074 articles. Out of these, only one (1) was listed in a finance journal, and that was the Journal of Financial Services Research. Considering the fact that finance journals listed in the database included Journal of Finance, Journal of Financial and Quantitative Analysis, Journal of Financial Economics, Journal of Financial

Intermediation, Journal of Financial Planning, Journal of Financial Research and Journal of Financial Service Professionals, this picture seems to be a fair reflection of the use of meta-analysis by researchers in the field of finance.

In comparison, it is interesting to note the following results from some journals of the social and health sciences for the same period. The Psychological Bulletin (using the keywords 'meta-analysis psychological bulletin') yielded 52 articles. The British Medical Journal (using the keywords 'meta-analysis british medical journal') yielded 56 articles. The Journal of the American Medical Association (using the keywords 'meta-analysis and jama') yielded 43 articles.

2.4 Comparison with Other Studies

In terms of objective, this study has a lot in common with most, if not all, of the prior studies conducted on the subject: to discover the relationship, if any, between M&A and shareholder value. The difference lies in the approach.

A review of empirical literature shows that each study makes a significant contribution to knowledge and yet each of them has significant limitation(s) that raise(s) doubts about the conclusiveness of its results. Moreover, because each study is conducted in a particular context, it becomes difficult, if not impossible, for a single empirical study to provide generalizable results. These only confirm what researchers have known for a long time: no single study, no matter how well designed, can resolve such a major issue. The

answer, it seems, does not lie in an 'improved' study which, with its own limitations, would be just one more addition to the huge number already existing rather than a conclusive resolution of the issue. The answer is more likely to lie in cumulating the collective knowledge embodied in the results of the numerous existing studies.

That is not to suggest that new (primary) research on M&A is unnecessary. However, in order not to reinvent the wheel, every new research should build on existing ones, after all the foundation of science is the cumulation of knowledge from the results of many studies (Hunter and Schmidt, 1990). To be able to build on previous research, researchers need to know what it is they already know. And that can only be effectively done by adopting a scientific method of cumulating results from exiting research.

Earlier attempts at reviewing and cumulating existing knowledge on M&A have mainly been narrative reviews, the most cited ones being Jensen and Ruback (1983) and Jarrell, Brickley and Netter (1988). The narrative review method has, however, been faulted for a number of reasons including, but not limited to, the following. Narrative reviews, almost invariably, result in historical summaries rather than integration of existing literature. The method is also unable to effectively handle the huge and ever-increasing number of studies as a result of which conclusions are usually based on a small number of subjectively selected studies. Moreover, the method lacks replication and therefore conclusions drawn can hardly be independently corroborated (Section 2.2 on Literature Review - Meta-Analysis has a fuller discussion on this issue). Recognizing the need to

adopt a more scientific method, Datta, Pinches and Narayanan (1992) used meta-analysis to review the literature on M&A and shareholder wealth creation.

Like Datta, et al, the present study reviewed the literature on M&A and shareholder wealth using meta-analysis. This study, however, differs from that study in at least three significant ways.

First, this study incorporated relevant studies that have come up since the first study was conducted (the most recent study used by Datta et al was published in 1989). Referred to as cumulative meta-analysis (Egger and Smith, 1997), this would help capture new evidence that has arisen over time.

Second, Datta, Pinches and Narayanan (1992) limited their analysis of potential moderating variables to five factors namely regulatory changes, the number of bidders, the bidder's approach (merger vs. tender offer), the mode of financing (cash vs. stock) and the type of merger or acquisition (conglomerate vs. non-conglomerate) and acknowledged that there are other factors that they did not consider. In addition to the factors analyzed by Datta et al (with the exception of regulatory changes), this study considered the issue of international M&A (specifically, whether the two parties involved in the transaction are from the same or different countries). The thorny issue of publication bias was also considered.

Third, Datta et al restricted their analysis to studies on M&A in the US in order not to confound the wealth gains due to country specific factors. Using Canada and the US, this study investigated whether country specific factors do influence the effect of M&A on shareholder wealth.

3.0 RESEARCH QUESTIONS AND DATA

3.1 *Research Questions*

In pursuance of the overall objective of cumulating the findings of the large body of existing empirical studies on M&A and wealth creation in order to establish the impact of M&A on shareholder wealth, this study sought to answer two (2) main questions. These were:

1. *Do M&A increase shareholder wealth?*

Specifically,

- (a) Do M&A increase bidder shareholder wealth?
- (b) Do M&A increase target shareholder wealth?

2. *Are there any variables that influence the impact of M&A on shareholder wealth?*

Specifically,

- (a) What, if any, variables influence the impact of M&A on shareholder wealth?
- (b) What are their directions and/or magnitude of effect?

3.2 *Data*

As in any meta-analytic study, access to original data was not required in this study. Instead, the results of empirical studies that have examined the effect of M&A on

shareholder wealth formed the units of analysis. Fifty-eight (58) US and seven (7) Canadian studies with a total of 823 useable observations of wealth effect estimates (736 and 87 for US and Canada respectively) were identified for use. The breakdown is given in Appendix C.

Each study selected had to satisfy the following criteria:

- I. It should have used the event study methodology
- II. It should have examined M&A occurring in either Canada or US
- III. The wealth effects had to be based on announcement (and not on the outcome-whether or not the M&A was successful)
- IV. The analysis had to be based on either daily or monthly returns

Published studies were identified from:

1. Journals
2. References of journal articles
3. Books
4. The Uncover database, and
5. The ABI Inform database

There was no limit placed on publication date.

Unpublished Ph.D. theses were used in this study to represent unpublished studies. *'Dissertation Abstracts'* was searched using the key words "merger* or acqui*". The abstracts of studies that came up were used to identify those that seemed relevant to this

study. An author search was then conducted in the following databases: *ABI Inform*, *Econlit* and *Uncover*. If there was any related publication by any of the authors, the dissertation was dropped. Fourteen (14) dissertations passed this screening process. Out of these, seven (7) were eventually used in the analysis (the rest were dropped mostly due to non-availability of sufficient information in the dissertation)

For studies that examined multiple mergers, only the wealth effects of the first merger were used in the analysis. Studies that focused on specific industries (such as REIT) were excluded. The only exceptions were studies that have examined wealth effects in the banking sector which were maintained to investigate the possibility that the wealth effects of M&A in specific sectors could differ from the general effect.

4.0 METHODOLOGY

4.1 *The Regression Model*

Statistical integration of research findings in meta-analysis is normally done by first converting the results of each primary study being used into a common metric (Olson, Wilkerson and Kaufman, 1997). This is in recognition of the fact that the results of the many different studies being integrated may not be directly comparable. The common metric, referred to by Stanley and Jarrell (1989) as the object of meta-analysis, is the effect size. Glass (1976) defined effect size as the difference between the means of the experimental group and control group, divided by the standard deviation of the control group. that is:

$$g = (\mu_e - \mu_c) / \sigma$$

where:

g is the effect size

μ_e is the mean of the experimental group

μ_c is the mean of the control group

σ is the standard deviation of the control group

In other words, effect size represents the standardized difference between the means of the experimental and control groups. Being a pure number with no units of measurement attached, effect size renders the results of the different studies comparable and thus suitable for analysis (Stanley and Jarrell, 1989). So central is the concept of effect size in

meta-analysis that according to Olson, Wilkerson and Kaufman (1997), studies for which calculating effect size is not possible must be discarded.

In spite of that strong sentiment, it is important to note that there is no single correct way (Hall and Rosenthal, 1995) or standardized approach (Abrams and Jones, 1995) for performing meta-analysis. Empirical researchers in business and economics tend to use regression analysis. To perform meta-analysis of such empirical studies, one would normally have to integrate regression results: in other words, perform regression analysis of regression analyses or as Stanley and Jarrell (1989) prefer to term it, perform a meta-regression analysis. Studies that have used regression analysis to perform meta-analysis include Datta, Pinches and Narayanan (1992) and Philips and Goss (1995).

Following in that tradition, this study also employed regression analysis. The regression model was of the form:

$$b_j = \beta + \sum \alpha_k Z_{jk} + \mu_j \quad (j = 1, 2, \dots, L) \quad (k = 1, 2, \dots, M)$$

where:

b_j is the reported estimate of the dependent variable (in this study, wealth impact of M&A announcement) in the j th of L observations from the literature

β is the regression constant

Z_{jk} 's are the independent variables that measure relevant characteristics of an empirical study that might explain variations across studies

α_k 's are the coefficients of the M different characteristics controlled for

μ_j is the error term (assumed to be independent, with a constant variance σ^2 and normally distributed with a mean of zero)

4.2 *The Dependent Variable*

Event study methodology, typically used in evaluating the economic impact of specific events on common stock returns, is the primary methodology used by empirical researchers investigating the impact of M&A on shareholder wealth. Using models such as the Capital Asset Pricing Model (CAPM), the market model and the market-adjusted model, researchers estimate (predict) the returns on stocks. Since the predicted returns (also known as the 'normal' or 'expected' returns) incorporate all known and expected events, the difference between actual and predicted returns is expected to be approximately zero. However, if there is any unexpected or unusual information event, then actual returns may be different from the predicted returns, resulting in negative or positive prediction errors (or abnormal returns). In an efficient market, which is a basic assumption of the event study methodology, the "prediction errors represent the investment communities' unbiased expectation of the present value of the long-run benefits of the event" (Datta et al, 1992; pp. 73). In other words, the prediction errors reflect the expected wealth creation or destruction impact of the merger or acquisition on shareholders. It is significant to note that the various models of normal returns do not yield significantly different results, hence the abnormal returns are not dependent on which model is used (Brown and Warner, 1980).

The dependent variable in this study (b_j , representing the wealth impact of M&A), was thus operationalized as the prediction errors or abnormal returns generated by the M&A announcement. The study examined the total gains and/or losses (net) in the event month. Specifically:

- (a) for studies that used monthly data, the analysis involved prediction errors for month zero, that is, the announcement month.
- (b) for studies that used daily data, the study examined the cumulative prediction error for the 21-day period commencing 10 days before the announcement date and ending 10 days after the announcement date (that is, -10 to 10 period, approximately 1 trading month).
- (c) for studies that used daily data, secondary analysis was also done for the following sub-periods:
 - i) -5 to 5
 - ii) -1 to 0

4.3 *The Independent Variables*

The independent variables comprised of two (2) major groups:

- (a) Factors Affecting Wealth Creation
- (b) Control Variables

4.3.1 Factors Affecting Wealth Creation

These are various factors that have been hypothesized in empirical and theoretical literature to influence the effect of M&A on shareholder wealth. The factors considered were:

- (a) Number of bidders (single or multiple)
- (b) Bidder's approach (merger or tender)
- (c) Type of financing (cash or stock)
- (d) Relatedness of acquisition (conglomerate or non-conglomerate)
- (e) Coverage (domestic or international)

4.3.2 Control Variables

Studies usually differ along methodological lines. It is therefore possible, and even likely, that some of the differences in the results of the studies would be due to methodological artifacts rather than material factors. Thus, it is necessary in any meta-analysis to control for these artifacts (Hunter and Schmidt, 1990).

The study controlled for the following methodological artifacts:

1. **SOURCE OF MERGER SAMPLE (FTC OR OTHER):** this was necessary because the FTC merger series cover only large M&A and therefore the results of any study based solely on the FTC database could be biased towards large firms. (This variable was applicable to US studies only).

2. **TYPE OF SAMPLE (CONTAMINATED OR CLEAN):** some studies use only 'clean' samples by excluding cases in which the M&A announcement occurred about the same time as other firm-specific information events such as earnings release and dividend announcements. Other studies do not specifically provide for this factor raising the possibility that the measured effect could have been influenced ('contaminated') by factors other than the M&A announcement.
3. **KIND OF DATA (DAILY OR MONTHLY):** some studies (particularly the more recent ones) use daily data whilst others (particularly earlier ones) use monthly data.
4. **OUTCOME (COMPLETED OR NOT COMPLETED):** this refers to whether the study used either a) only completed (successful) M&A or b) only uncompleted (unsuccessful) M&A. Datta et al point out that though there is no definite theoretical basis to believe that the market can anticipate the outcome at the time of the announcement, this factor is included mainly to facilitate comparison with earlier studies.
5. **INDUSTRY (GENERAL OR BANKING):** to test whether the M&A effects in specific sectors (represented here by the banking sector) are different from the general effects.
6. **METHODOLOGY (MARKET MODEL OR OTHER):** to investigate the suggestion in the literature (Brown and Warner; 1980, 1985) that using different methodologies to generate abnormal returns should not result in significantly different results. The results from studies using the market

model (which is the most dominant in the literature) was compared with results from studies using other methodologies.

4.3.3 Other Specific Variables of Interest

The study also attempted to investigate whether there are significant differences in the results of the following categories of studies.

- I. Country (Canada or US): to investigate whether country specific factors influence shareholder returns from M&A
- II. Publication (Published or Unpublished): to investigate whether published studies systematically yield more significant results than unpublished ones?
- III. Time (1970s and 1980s): has shareholder returns from M&A significantly changed over the two decades?

4.4 EXPECTED DIRECTION OF INFLUENCE OF THE FACTORS AFFECTING WEALTH CREATION

4.4.1 TYPE OF FINANCING: Cash or Stock

A number of reasons have been suggested in the literature to explain why different methods of financing corporate acquisitions (particularly cash or stock or a combination of the two) may have different valuation impacts. These include information asymmetry, tax implications, capital structure and the free cash flow hypothesis.

Information Asymmetry

In a world of asymmetric information between managers on one hand and the general investing public on the other, and in which managers are presumed to act in the interest of existing shareholders in preference to new investors, the method of financing may convey (signal) valuable information about bidding firm managers' evaluation of the bidding firm's intrinsic value relative to its market value (Myers and Majluf, 1984). Bidding firm managers are more likely to use cash if they believe the stock of their firm is undervalued. On the other hand, if they believe the stock is overvalued, they are more likely to use stock (Travlos, 1987). Market participants are aware of this and therefore interpret cash offers as good news and stock offers as bad news regarding the bidding firm's true value and earning potential. As a result, cash offers are expected to have positive impact on bidder shareholder wealth whilst stock offers are expected to have the opposite effect.

Masse, Hahrahan and Kushner (1990) point out that the signaling effect may also affect the value of the target firm. They argue that in cash offers, the values of the target firm will not be affected. In stock offers, however, the target party will become part of a new entity. Market participants, interpreting the mode of payment (stock) as bad news, expect reduced profitability not only from the bidding firm but also from the new entity. Hence a stock offer reduces the value of the stock of the target firm relative to a cash offer.

For payment method to be a useful signal, there must be penalty for false signaling. Wansley, Lane and Yang (1987) point out that factors such as the generally higher premiums in cash acquisitions and the reluctance of managers to use cash as that could later expose them to the discipline of the market reduce the incentive for false signaling.

Tax Implication

Cash and stock acquisitions have different personal tax and corporate tax implications for target firm shareholders and the bidding firm respectively. Cash acquisitions are taxable transactions and will therefore invoke immediate tax liabilities for any capital gains on the part of target shareholders. In stock acquisitions, however, any such tax liabilities are deferred until the stocks are eventually disposed of. Thus target firm shareholders in cash acquisitions usually demand higher premiums to compensate for their immediate tax obligations.

The higher premiums paid by the bidding firm in cash acquisitions relative to stock offers do not necessarily have adverse impact on the bidding firm. This is because bidding firms

in cash offers (unlike in stock offers) are able to write-up the values of certain assets of the target firm to their fair market values. This leads to higher depreciation (specifically, capital cost allowance²⁰) and therefore higher after tax future cash flows for the acquiring firm. To the extent that the additional premium paid is less than the tax advantage gained, bidding firms do not lose, but rather gain.²¹

Capital Structure

The combination of two firms whose cashflows are not perfectly positively correlated can reduce the default risk of the combined entity, hence increasing its debt capacity due to the co-insurance effect (Lewellen, 1971 in Travlos, 1987). The debt capacity of the new entity will also increase if there is any latent (unused) debt capacity in the acquired firm. Unless capital restructuring occurs, at least part of the gains of the increased debt capacity goes to bondholders of the merging firm at the expense of the shareholders (Travlos, 1987). Hence a stock offer results in a transfer of wealth from stockholders to bondholders leading to fall in stock prices. The positive effect of cash acquisitions may however offset the negative changes in merging firms' common stock prices caused by the coinsurance effect.

²⁰ Depreciation is not deductible for tax purposes

Free Cash Flow

Jensen's (1986, 1988) Free Cash Flow²² theory suggests that managers of firms with cash flow in excess of profitable investment opportunities have the tendency to waste them on organizational inefficiencies (including perquisites for themselves) or invest in unprofitable projects. Hence, anything that reduces this discretionary cashflow can reduce wasteful expenditures and hence have positive impact on shareholder wealth.

Since cash acquisitions use up excess funds, divert funds from unprofitable internal investments or cause the bidder to incur debt (McCabe and Yook, 1997), they reduce the excess cashflow available to management and hence have positive impact on shareholder wealth. It is interesting to note the possible contradictions between the free cash flow theory and Myers and Majluf's (Pecking Order) hypothesis which predicts that managers will build up slack to enable them take up positive NPV projects without being forced unto the equity market, particularly at unfavourable times (in which case excess cash is not such a bad thing!). As McCabe and Yook point out, however, the 2 theories may apply to different types of firms. Jensen's theory applies to firms with high investment levels and the Myers and Majluf theory applies to firms which hoard free cash flow and hence have low investment levels.

²¹ Amihud, Lev and Travlos point out that the write-up option in the US was made less attractive by the 1986 Tax Reform Act which triggered immediate tax liability for any capital gains created by the write-up.

²² Free cash flow is the excess cash flow over that needed to fund positive NPV projects (including optimal investment in slack) (Smith and Kim, 1994).

In summary all the factors discussed so far (information asymmetry, tax implication, capital structure and free cash flow) suggest that cash acquisitions have positive impact on the wealth of both bidding and target shareholders whilst stock acquisitions have the opposite effect.

For the purposes of this study, only pure cash and pure stock acquisitions would be considered. Combinations of stock and cash have been specifically excluded because they vary so widely in their compositions that comparing them may not yield meaningful results.

4.4.2 COVERAGE: International or Domestic

International acquisitions are at the crossroads of M&A and Foreign Direct Investment (Feils, 1993). Any attempt to explain the impact of international mergers and acquisitions must, therefore, necessarily draw from the literature on both fields of research.

The literature suggests that there may be certain additional sources of gain in international acquisitions that are unavailable in domestic acquisitions. These include a) imperfections in the product and factor market, b) imperfections in the international financial markets and c) biases in government and regulatory policies (Pettway, Sicherman and Spiess, 1993).

Doukas and Travlos (1988) argue that the systemic contribution to the value of a firm generated by the development of a multinational network offers a more complete explanation of potential benefits from FDI. They quote Kogut (1983) as saying "*the primary advantage of the multinational firm, as differentiated from a national corporation, lies in the flexibility to transfer resources across borders through a globally maximizing network*" (Doukas and Travlos, 1988; pp. 1161). According to Doukas and Travlos, the valuation impacts of multinationality derive from the possession of the following options: a) ability to arbitrage institutional restrictions (e.g. tax codes, antitrust provisions and financial limitations); b) informational externalities captured by the firm in the conduct of international business (e.g. learning cost externalities) and c) the cost saving gained through joint production in marketing and manufacturing. Doukas and Travlos go on to advance the "positive-multinational-network-hypothesis" which posits that the expansion of a firm's operations on a global scale tends to accomplish investors' international diversification objectives whilst enhancing the firm's ability to gain from the systemic advantages inherent in a multinational network; hence the announcement of a foreign acquisition may generate abnormal return on the acquiring firm's stock (over and above that available in a domestic acquisition).

Feils (1993) cautions that international acquisitions come with their own unique costs such as overcoming cultural differences, language barriers and the geographical distance between corporate headquarters and the target firm. Any expected incremental benefits should therefore exceed these incremental costs in order to generate a net benefit.

In summary, the literature on mergers and acquisitions and FDI suggest that international acquisitions possess certain unique advantages. To the extent that these unique advantages can not be traded and acquired by domestic acquirers, international acquisitions should, on average, generate more total gains than domestic acquisitions. The division of the gains between the bidding and the target shareholders would, however, depend on the competitiveness of the international market for corporate control. If the market is not competitive, the bidder will be able to retain most or all of the excess gain. In a highly competitive market, auction theory suggests that most or all the gains would go to the target firm through the bidding process.

4.4.3 NUMBER OF BIDDERS: Single or Multiple

Auction theory suggests that the presence of competition in multiple-bidder acquisitions and the lack of it in single-bidder acquisitions would influence returns to bidding and target firm shareholders. As Ruback (1988) points out, the concept of competitive markets raises the issue of rivalry among bidding firms. *"In this market, each potential bidder evaluates the target and advances a bid if it is advantageous to do so. This process continues and the offer is bid up until the takeover is a negative net present value investment for the unsuccessful bidders"* (Ruback, 1988; pp. 142). In fact, in extreme cases, the offer is bid so high that the takeover becomes a negative NPV project for the successful bidder (the winner's curse). This situation is facilitated by government regulations that compel bidding firms to disclose information about the target firm, delay the offer long enough to enable other potential bidders to discover the information and

give withdrawal privileges that allow target firm stockholders to withdraw and tender their shares to the highest bidder (Bradley, Desai and Kim, 1988). The cumulative effect of the above is that target shareholders would be better off in multiple bidder contests (to the detriment of bidding firm shareholders) whilst bidding firm shareholders would be better off in single-bidder acquisitions (to the detriment of target firm shareholders).

4.4.4 RELATEDNESS OF ACQUISITION: Conglomerate or Non-conglomerate

Acquiring firms may pursue targets that are related to their existing lines of business (non-conglomerate) or those that are unrelated (conglomerate or diversification). Healy, Palepu and Ruback (1992) argue that, following from the hypothesis that mergers and acquisitions improve cashflows by providing opportunities for economies of scale, synergy or product market power, mergers by firms having overlapping business (nonconglomerates) are more likely to show greater cashflow improvements than mergers between non-overlapping firms (conglomerates).

Also presenting an argument in support of nonconglomerate mergers, Charterjee (1986) presents three possible sources of synergy in an acquisition: collusive synergy (class of scarce resources that leads to market power); operational synergy (class of scarce resources that leads to production and/or administrative efficiencies) and financial synergy (class of scarce resources that leads to reduction in the cost of capital).

Table 3: Different Types of Mergers and their Associated Synergies

Type of Synergy	Type of Merger		
	Horizontal	Related Non-Horizontal	Unrelated
Collusive	Possible	Unlikely	Unlikely
Operational	Possible	Possible	Unlikely
Financial	Possible	Possible	Possible

Source: Chatterjee (1986; pp. 123)

As Table 3 shows, there are more possible sources of synergy in related acquisitions (three in horizontal and two in non-horizontal) than in unrelated acquisitions (only one).²³ Related acquisitions are therefore more likely to be beneficial to shareholders of both bidding and target firms than unrelated ones. In fact, financial theory does not support business diversification (Sicherman and Pettway, 1987). As a result, the market does not reward conglomerate acquisitions. It is argued that acquisition to increase market exposure or for diversification may not be optimal if investors can achieve the same ends individually (Gunay and Barnes, 1995).

Singh and Montgomery (1987) capture the key points in the literature on conglomerate and non-conglomerate acquisitions when they state that *"In summary, the value changes in unrelated acquisitions are expected to be positive. However, we note that the benefits in these transactions should also be available in related acquisitions. In contrast, the specific gains in related acquisitions are not expected to be present in unrelated acquisitions. On average, therefore, the gains in related acquisitions should be greater than the gains in unrelated acquisitions"* (pp. 380).

²³ Chatterjee (1986) cautions, though, that there is no reason to believe that all the three types of synergy contribute equally in an acquisition.

4.4.5 APPROACH: Merger or Tender Offers

Mergers result from direct negotiations between the managements and/or Boards of Directors (BOD) of acquiring and target firms. Though shareholders have the final say (through their voting rights) on whether or not a merger goes ahead, they only get to have that say if management/BOD first approves the agreement and puts it to vote. In effect then, management/BOD has veto powers over all merger proposals. Not surprisingly, mergers almost invariably turn out to be friendly takeovers. In tender offers, however, the offer is made directly to shareholders of the target firm. Shareholders decide individually whether or not to accept the offer. Incumbent target managers are only formally involved to the extent that they are also shareholders. Informally, they usually declare their approval or disapproval of the offer and it is not uncommon for them to spend resources in an attempt to block the offer from going through. The difference in approach between mergers and tender offers potentially gives rise to differences in their impact on stockholder wealth.

Being directly between bidding and target managements, merger negotiations are usually shrouded in secrecy. They usually come into the open only after agreement has been reached and is being put to stockholder vote. Tender offers, on other hand, are public events. Other potential bidders are alerted and this could lead to a competitive (auction type) process for the target firm (Datta, Narayanan and Pinches, 1992) with the bidders trying to outbid each other. As a result, target firm shareholders benefit (in the form of higher premiums) at the expense of bidding firm shareholders.

Secondly, in mergers, the payment of any control premium usually goes to the target firm managers (who are in charge of the negotiations) in the form of favourable post-acquisition contracts or fat severance packages. In tender offers, any such control premium goes directly to the shareholders. Target shareholders therefore stand to benefit more in tender offers.

It is important to note that there is, at least, one scenario in which both target and bidding firm shareholders could benefit in tender offers and lose in mergers. In the inefficient target management hypothesis (and Jensen and Ruback's managerial competition model), it is argued that takeovers provide a mechanism to replace inefficient target firm managers with more efficient ones. This opportunity does not easily present itself in mergers, as target managers are able to negotiate favourable post acquisition contracts for themselves. In that scenario, both bidding and target shareholders would be worse off (compared to tender offers discussed below) as the inefficiencies would remain in the system²⁴. In tender offers, incumbent (inefficient) managers are more likely to be replaced and both bidding and target shareholders would be better off. Calvet and Lefoll (1985b) also point out that since tender offers are usually hostile, they usually call for additional expenditures (advertising, legal, etc). It is therefore expected that acquiring managers (assuming they are shareholder wealth maximizers) would resort to this option only when they are convinced that the deal is substantially profitable and this is expected to reflect in

²⁴ A possible exception being where target firm managers are paid off usually in the form of fat severance packages in which case they receive the 'control premium' at the expense of target shareholders.

both bidding and target stock prices. In essence, tender offers would benefit both target and acquiring firm shareholders whilst mergers would have the opposite (or neutral) effect.

It is important to note, in conclusion, that the dominant view in the literature is that tender offers benefit target shareholders at the expense of acquiring shareholders whilst mergers are more beneficial to acquiring shareholders (as they pay less premium).

Table 4 summarizes the hypothesized direction of influence of the various factors discussed in this section.

Table 4: Summary of Expected Direction of Influence of Factors Affecting Shareholder Wealth Creation*

	BIDDERS	TARGETS
<i>Type of financing:</i> Cash	Positive	Positive
Stock	Negative	Negative
<i>Coverage:</i> Domestic	Negative	Negative
International	Positive/Neutral	Positive/Neutral
<i>No. of Bidders:</i> Single	Positive	Negative
Multiple	Negative	Positive
<i>Relatedness of Acquisition:</i> Conglomerate	Negative	Negative
Non-conglomerate	Positive	Positive
<i>Approach:</i> Mergers	Positive	Negative
Tender Offers	Negative	Positive

* Please note that the directions of effect stated here are in *relative terms* and not in absolute terms. For instance stock has a negative coefficient *relative* to cash.

4.5 *Data Analysis*

The data set was coded into dependent and independent observations. Dependent observations were classified as observations on which other observations depended. For instance, in a situation where there are observations for total bidders, cash bidders and stock bidders (and the last two are simply sub-sets of the total), the total bidders would be classified as 'dependent' and the other two as 'independent'. The results reported in the study are based on the 'independent' observations. This was to ensure that even though multiple observations are used from some studies, any issue of dependence between those observations would be minimized.

The original intention was to have all the factors affecting wealth creation in the model simultaneously. However, due to factors such as researchers' quest for originality and differences in research interests, different studies have investigated different variables. Consequently, there were many instances when simple correlation between the various independent variables²⁵ could not be computed, making model building (with all the variables included) virtually impossible. As a solution, all possible permutations of the five (5) factors affecting wealth creation were generated. An attempt was then made to build a model with each of the permutations (that is, each of the permutations AND all the control variables in the model). The results reported are for the permutations (and periods) for which significant models could be built. For models with two of the factors affecting wealth creation, their relative importance was investigated if both were significant.

For each of the models, the following tests were conducted:

- a) *Normality*: this was tested using the Histogram of Frequency and Regression Standardized Residual as well as the Normal P-P Plot of Regression Standardized Residual. There was no serious case of non-normality.
- b) *Heteroskedasticity*: this test was conducted by plotting Studentized Residual against (Unstandardized) Predicted Value. The plots showed no evidence of heteroskedasticity.
- c) *Outliers and Influential Observations*: Outliers were identified as any observation with Standardized or Studentized Residual greater than three (3). Outliers were only deleted if they were also influential observations (that is, if the Cook's Distance was greater than 1). In a few cases, some observations were influential (had Cook's Distance greater than 1) even though they were not outliers. Such observations were also removed from the analysis.
- d) *Multicollinearity*: the presence of multicollinearity was tested using the Variance Inflation Factor (and Tolerance). Generally, the VIFs were far below 10 so there were no serious cases of multicollinearity.
- e) *Variable Importance*: a number of measures of variable importance have been suggested in the literature. One of these is a measure that was theoretically justified by Pratt (1987) and which has come to be known as Pratt's measure. The measure defines an independent variable's importance as the product of its simple correlation with the dependent variable and its standardized regression coefficient. An extension

²⁵ Specifically, the factors affecting wealth creation

of Pratt's measure has been developed by Thomas et al (1996, 1998) using the geometric approach. This study used the extended version by Thomas et al in measuring the relative importance of the variables under study.

The formula for the measure (by Thomas et al) is given as follows:

$$d_j = \tilde{\beta}_j \tilde{\rho}_j / R^2$$

Where:

d_j is the variable importance (%)

$\tilde{\beta}_j$ is the standardized regression coefficient

$\tilde{\rho}_j$ is the simple correlation between the predictor and response variables

5.0 RESULTS AND ANALYSIS

As stated in the methodology section, the primary goal of this study was to investigate the shareholder wealth impact of M&A in the event month. This comprised of month zero (0) for studies using monthly data and days -10 to 10 (approximately one trading month) for studies that used daily data. In addition, for studies that used daily data, analyses were performed for the sub-periods of days -5 to 5 and -1 to 0 in order to investigate the immediate announcement period returns. Accordingly, the results are presented for these three periods. In some instances, however, analysis could not be performed for all three periods due to such factors as the model not fitting the data, small sample size (below five²⁶) etc. In such cases, the results reported are for only the periods that analysis could be performed. Moreover, as the tables in this section would show, not every control variable appeared in every model.

5.1 *Type Of Financing (FIN) in the Model*²⁷

Table 5 presents the results of the regression analysis with Type of Financing (Cash or Stock) in the model. As shown on the table, bidders experienced a mean CAR of 0.2178% in Month 0. That is, bidder firm shareholders had a wealth increase of only 0.2178% resulting from the acquisition, and even that was not significantly different from 0. In other words, bidding firm shareholders did not realize any significant wealth

²⁶ This was also the cut-off point in the Datta et al (1984) study

²⁷ Any reference to 'major variable' in this section refers to the factors influencing shareholder wealth under consideration; specifically: Financing, No. of Bidders, Approach (merger or tender), Relatedness of Acquisition and Coverage (domestic or international).

changes from the acquisition. In the immediate 2-day announcement period of -1 to 0, bidders realized a small but statistically significant loss of 0.8122%. Target firm shareholders, on the other hand, gained significantly (18.4232%) in Month 0. In days -1 to 0 and -5 to 5, the mean gains were 18.9982% and 23.5308% respectively, both were significant (thus a large proportion of the total wealth effects in Month 0 actually occurred in days -1 to 0). The above results are consistent with the dominant view in the literature (as well as the concept of competitive market for corporate control) which suggest that virtually all gains in M&A go to target firm shareholders.

Table 5: Regression Analysis - FIN

	Bidders		Targets		
	Month 0	-1 to 0	Month 0	-5 to 5	-1 to 0
Mean CAR	0.2178	-0.8122***	18.4232***	23.5308***	18.9982***
Standard Deviation	2.9399	1.4858	7.4824	16.6147	10.5054
Regression Analysis [*]					
FIN (Cash=1)	4.400***	1.492***	12.495***	18.402*	0.926
CTRY (Canada=1)	-1.546		-13.846***	-15.854*	
SAMPLE (FTC=1)		1.769*			
OUTCOME (Comp=1)		-0.726			
CLEAN (Clean=1)	1.253	-0.370	6.385		-7.696
IND (General=1)	1.017	-0.686			
PUBL (Published=1)		0.161			-21.750**
METH (Mar Mod=1)	-0.509	-2.200**	8.637**		3.847
Constant	-2.303	1.892	5.565*	18.108*	32.927*
R ²	0.473	0.350	0.784	0.731	0.747
Adjusted R ²	0.395	0.261	0.751	0.678	0.663
Sig. of Model	0.1%	1%	0.1%	1%	1%
N	40	59	31	13	17

* The values produced here are the unstandardized coefficients

* $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In the regression results for bidders, FIN is significantly related to changes in shareholder wealth for both Month 0 and days -1 to 0. The direction of the coefficient was consistent with theoretical predictions: cash was positively related to changes in bidding shareholder wealth whilst stock had the opposite effect. For targets, FIN was significant in Month 0 and days -5 to 5. In both periods, the direction of the coefficient was as expected: cash (stock) was positively (negatively) related to changes in target shareholder wealth. FIN, was however, not significant for targets in days -1 to 0.

The R^2 and Adjusted R^2 were far higher for the target models than for the bidder ones. This suggests that the target models explain more of the variability in the wealth changes than do the bidder models. It is important, however, to exercise caution in drawing any definite conclusions from the R^2 and Adjusted R^2 as only one of the major variables of interest is in the models. It would have been more appropriate to investigate the simultaneous impact of all the variables of interest.

5.2 *Number of Bidders (NBID) in the Model*

The results for models with Number of Bidders (single or multiple) are presented in Table 6. Unfortunately, due to data limitations, analysis could only be done for the periods days -5 to 5 and -1 to 0. As the table shows, bidders suffered small but statistically significant losses of 0.856% and 1.0795% in days -1 to 0 and -5 to 5 respectively. In the regression analysis, NBID was significant in both periods. Just as the theory predicted,

NBID-Single had a positive coefficient (whilst NBID-Multiple had a negative coefficient). In other words, single bidder acquisitions had a positive impact on the wealth of bidding firm shareholders (the opposite was true in multiple bidder acquisitions).

For target shareholders, there were large and significant mean gains of 18.2041% and 26.4624% in the periods -1 to 0 and -5 to 5 respectively. The variable NBID was not significant in either period suggesting that NBID did not significantly impact on changes in target shareholder wealth.

Table 6: Regression Analysis - NBID

	Bidders		Targets	
	-5 to 5	-1 to 0	-5 to 5	-1 to 0
Mean CAR	-1.0795*	-0.8560*	26.4624***	18.2041***
Standard Deviation	2.2219	1.2190	10.4714	9.6775
Regression Analysis*				
NBID (Single=1)	3.388**	1.879*	-10.913	-0.205
PUBL (Published=1)	1.178	1.439*	-10.534	-10.174*
METH (Mar Mod=1)	0.794	-0.200	11.113	12.579*
CLEAN (Clean = 1)		-0.474		-0.683
Constant	-4.521**	-2.293**	32.721***	14.542*
R ²	0.412	0.556	0.419	0.484
Adjusted R ²	0.301	0.379	0.285	0.312
Sig. of Model	5%	10%	10%	10%
N	20	15	17	17

* The values produced here are the unstandardized coefficients

- $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5.3 Approach (APPR) in the Model

Table 7 presents the results of the analysis with APPR in the model. Bidders experienced small insignificant losses of 0.2096% and 0.1556% in the periods covering days -5 to 5 and -1 to 0 respectively. APPR was significant in both periods. It is interesting to note that whilst mergers (tender offers) had negative (positive) coefficients in days -1 to 0, the direction of the coefficients changed in the wider period of -5 to 5. It is unfortunate that the analysis could not be performed for Month 0 as this would have thrown more light on the situation. Possibly, the major lesson learnt here is that, depending on the period, the direction of impact of a variable could change and that one should be very cautious about generalizing any detected effects in one period over all periods.

Table 7: Regression Analysis - APPR

	Bidders		Targets		
	-5 to 5	-1 to 0	Month 0	-5 to 5	-1 to 0
Mean CAR	-0.2096	-0.1556	17.8650***	21.8478***	13.1618***
Standard Deviation	1.5837	1.4978	8.8799	7.7370	5.4676
Regression Analysis*					
APPR (Merger=1)	2.518*	-1.010*	-7.358**	-10.096	-3.111
DATA (Daily=1)			0.390		
CTRY (Canada=1)			-11.366***		
SAMPLE (FTC=1)	0.592	2.076*		-0.156	1.232
OUTCOME (Comp=1)	-0.791	-0.706		2.443	-0.451
CLEAN (Clean=1)	-3.272**	-0.746~	4.293	-1.023	-5.202*
IND (General=1)	4.360**	1.760		-5.467	-3.665
PUBL (Published=1)	2.544~		1.331	3.649	
METH (Mar Mod=1)	1.725*	-0.243	3.658~	6.443	6.616*
Constant	-7.717**	-0.163	20.004***	20.534*	14.371**
R ²	0.552	0.260	0.578	0.739	0.481
Adjusted R ²	0.387	0.161	0.513	0.617	0.361
Sig. of Model	5%	5%	0.1%	1%	1%
N	27	52	46	23	33

* The values produced here are the unstandardized coefficients

~ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

As expected, target shareholders had statistically significant gains of 13.1618%, 21.8478% and 17.865% respectively in -1 to 0, -5 to 5 and Month 0 respectively. It could be noted that the trend in the mean CAR is very similar to what was obtained when FIN was in the model (Table 5). This seems to suggest that the immediate announcement periods capture a sizable proportion of the gains. The further away one gets from the announcement day, the less impact is felt on shareholder wealth. This observation if true in all cases would, at least partially, be supportive of the efficient market hypothesis. Unfortunately these were the only two (2) instances, in the case of target firms, that the data permitted analysis to be done for all three (3) periods under study. We are therefore unable to confirm if the trend holds in all cases. In terms of the variable APPR, the coefficient of merger (tender offer) was consistently negative in all three periods. It was, however, significant in only Month 0. The direction confirmed our initial expectation that mergers adversely affect target shareholders whilst tender offers benefit them.

5.4 *Relatedness of Acquisition (RELN) in the Model*

With RELN in the model, results are as per Table 8. For bidding firm shareholders, there was a small insignificant mean loss of 0.0014% in days -1 to 0. RELN was not significant.

For targets, there were statistically significant mean gains of 12.057% and 10.0667% in the periods -1 to 0 and Month 0 respectively. These are very low compared to the means obtained in the other models. Not surprisingly, the mean CAR of 10.0667% for Month 0

was only significant at the 10% significance level compared to all the other mean CARs for targets which were significant at, at most, 1% level of significance. RELN was significant in -1 to 0 but not in Month 0. In -1 to 0, the direction of effect was contrary to our expectation. The theory suggested that shareholder benefits would be negatively correlated with conglomerate acquisitions. As it turned out, target shareholder wealth was positively (negatively) related to conglomerate (non-conglomerate) acquisitions. The R^2 and Adjusted R^2 for targets are rather high so it is necessary to bear in mind that it would have been more informative to have all the variables of interest in the model simultaneously. Moreover, it is important to draw attention to the rather low sample size for targets. The results applicable to targets under this sub-section may therefore need to be investigated further with a larger sample size.

Table 8: Regression Analysis - RELN

	Bidders	Targets	
	-1 to 0	Month 0	-1 to 0
Mean CAR	-0.0014	10.0667*	12.0570***
Standard Deviation	1.0026	9.9032	5.3513
Regression Analysis*			
RELN (Cong=1)	0.900	1.380	10.300**
CTRY (Canada=1)		-18.425***	
CLEAN (Clean=1)	2.199**		-10.027**
IND (General=1)	0.162		-1.373
PUBL (Published=1)	0.351		-9.708**
METH (Mar Mod=1)	0.612		1.342
Constant	-2.733**	21.43***	26.016***
R^2	0.571	0.997	0.978
Adjusted R^2	0.428	0.996	0.951
<i>Sig. of Model</i>	5%	0.1%	1%
<i>N</i>	21	6	10

* The values produced here are the unstandardized coefficients

- $p < 0.10$. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

5.5 Coverage (COV) in the Model

Table 9: Regression Analysis - COV

	Bidders			Targets	
	Month 0	-5 to 5	-1 to 0	-5 to 5	-1 to 0
Mean CAR	0.4682	-1.0109**	-0.9464***	29.1573***	20.2367***
Standard Deviation	1.6387	1.8500	1.3809	11.6470	9.6668
Regression Analysis*					
COV (Domestic=1)	-1.456	0.905	-0.665	-1.788	-3.948*
DATA (Daily=1)	-1.165				
OUTCOME (Comp=1)			-1.357*		
CLEAN (Clean =1)	-2.186*	0.366	-0.535	1.644	5.107*
PUBL (Published=1)		0.558	0.237	-13.946*	-7.149**
METH (Mar Mod=1)	0.761	2.679**		8.807	
Constant	2.221	-4.251**	1.047	24.210***	21.777***
R ²	0.543	0.263	0.097	0.375	0.434
Adjusted R ²	0.436	0.165	0.052	0.313	0.402
Sig. of Model	1%	10%	10%	1%	0.1%
N	22	35	85	45	57

* The values produced here are the unstandardized coefficients

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

The results derived with COV in the model are presented in Table 9. The mean CAR for bidders were -0.9464%, -1.0109% and 0.4682% for -1 to 0, -5 to 5 and Month 0 respectively. The first 2 figures were significant but the last one (i.e. for Month 0) was not. COV was not significant in any of the 3 periods which suggests that whether an acquisition is domestic or international does not significantly affect return to bidding firm shareholders. The R² and Adjusted R² were rather low for periods -1 to 0 and -5 to 5 suggesting that the models for those periods did not explain much of the changes in bidding firm shareholder wealth.

In the case of targets, there were significant mean wealth gains of 20.2367% and 29.1573% in the period -1 to 0 and -5 to 5 respectively. COV was significant in days -1 to 0 and in that period, domestic acquisitions were negatively related to shareholder wealth whilst international acquisitions were positively related. This is consistent with the theoretical prediction that international acquisitions generate more gains to shareholders than domestic ones do. COV was not significant in days -5 to 5.

5.6 Number of Bidders (NBID) and Approach (APPR) in the Model

Table 10: Regression Analysis - NBID-APPR

	Bidders -1 to 0	Targets Month 0
Mean CAR	-0.0263	23.2871***
Standard Deviation	0.6923	9.0237
Regression Analysis*		
NBID (Single=1)	1.850*	-8.587
APPR (Merger=1)	-0.260	-11.043 [~]
SAMPLE (FTC=1)	-0.820 [~]	
Constant	-1.040 [~]	35.380**
R ²	0.783	0.724
Adjusted R ²	0.621	0.585
Sig. of Model	10%	10%
N	8	7

* The values produced here are the unstandardized coefficients

[~] $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 10 presents the results with NBID and APPR in the model. The mean CAR to bidders in days -1 to 0 was a small insignificant loss of 0.0263%. NBID was significant. As hypothesized, single (multiple) bidder acquisitions were positively (negatively) related to changes in bidder shareholder wealth. APPR, unlike the case when it was the

only major variable in the model, was not significant. This stresses the importance of getting all variables of interest in the model simultaneously as there may be some interactive and partialling out effect between some (or even all) of them.

For targets, there was a significant mean gain of 23.2871% in Month 0. When only NBID was in the model, analysis could not be performed for Month 0 (in this particular case, the model did not fit the data), so this presents an opportunity to investigate the relationship between changes in the mean CAR and NBID for the overall period of Month 0. It turns out that NBID was not significant (which is consistent with the results for days -5 to 5 and -1 to 0 when only NBID was in the model). APPR was significant and had the same direction of effect as when it was the only variable in the model: mergers (tender offers) were negatively (positively) related to changes in target shareholder wealth.

It is important to acknowledge that the sample size in the present model is rather small. It has been included only because it lends support to results from models with larger sample sizes.

5.7 Number of Bidders (NBID) and Coverage (COV) in the Model

As shown in Table 11, bidding shareholders suffered a significant loss of 0.856% in days -1 to 0. NBID was, again, significant. The direction of the coefficient was also in line with all the previous analysis done on NBID in this study: single-bidder acquisitions were

positively related to bidder shareholder wealth whilst multiple bidder acquisitions were negatively related to changes in bidding shareholder wealth. COV, as was the case when it was the only variable in the model, was not significant.

Table 11: Regression Analysis - NBID-COV

	Bidders -1 to 0	Targets -1 to 0
Mean CAR	-0.8560*	18.2041***
Standard Deviation	1.2190	9.6775
Regression Analysis*		
NBID (Single=1)	1.790*	-1.951
COV (Domestic=1)	0.819	-4.129
PUBL (Published=1)	1.097	-7.970
METH (Mar Mod=1)	0.141	11.583*
Constant	-3.111*	18.067*
R ²	0.577	0.519
Adjusted R ²	0.408	0.359
<i>Sig. of Model</i>	10%	10%
<i>N</i>	15	17

* The values produced here are the unstandardized coefficients

· $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In the case of targets, there was a significant gain of 18.2041% for -1 to 0. NBID, again, was not significant. COV, however, unlike the case when it was the only major variable in the model, turned out to be insignificant. Though this is not consistent with the first analysis, it does not necessarily give a cause for alarm. This is because there are a number of factors suggesting that, in the overall picture, COV may not be significant. In the first analysis (when COV was the only major variable in the model), COV was not significant in -5 to 5 (results for Month 0 was unavailable); for the period -1 to 0, it was significant

only at the 10% level even though it had a considerably larger sample size of 57 (compared to 17 in this instance) and therefore had more power.

5.8 *Approach (APPR) and Type of Financing (FIN) in the Model*

Evidence in Table 12 shows that there was a small and insignificant loss of 0.6233%, small but significant loss of 0.8335% and a small and insignificant loss of 0.2183% to bidding firm shareholders in Month 0, days -5 to 5 and days -1 to 0 respectively. The direction and significance of the coefficients of APPR over the 3 periods is quite interesting. Whilst in period -1 to 0, merger (tender) was significantly negatively (positively) related to changes in bidding shareholder wealth when APPR was the only major variable in the model, it is not significant in the present model (APPR was also insignificant in Month 0 but significant in -5 to 5 in the present model). This might be a demonstration of the interaction and partialling out effect between APPR and FIN. It is important to note that the medium of payment in most mergers is stock whilst cash is mostly used in tender offers. Therefore the results here may be due to the fact that after taking out the effect of payment, whether an acquisition is through merger or tender may not be significant. FIN was significant in all three periods: cash was positively related to changes in bidding shareholder wealth whilst stock was negatively related, which is consistent with our expectations.

For targets, as was expected, shareholders experienced significant gains of 12.8662% and 20.7136% in period -1 to 0 and Month 0 respectively. In the overall period of Month 0, merger (tender offer) was significantly negatively (positively) related to changes in stockholder wealth. In period -1 to 0, the interaction between APPR and FIN resulted in APPR being significant (but only at 10%) even though it was not significant when APPR was the only major variable in the model. Again, the direction of the coefficient was consistent with our expectation: merger was negative and tender offer was positive. FIN yielded the same results as when only FIN was in the model: significant in Month 0 and insignificant in -1 to 0. And in Month 0, the coefficient of cash was positive (and that of stock was negative).

Table 12: Regression Analysis - APPR-FIN

	Bidders			Targets	
	Month 0	-5 to 5	-1 to 0	Month 0	-1 to 0
Mean CAR	-0.6233	-0.8335*	-0.2183	20.7136***	12.8662***
Standard Deviation	2.1886	1.2885	1.3100	6.5615	4.7032
Regression Analysis*					
APPR (Merger=1)	0.850	-1.394 [~]	0.649	-6.442**	-5.495 [~]
FIN (Cash=1)	3.640***	1.239 [~]	1.506***	8.900**	0.890
CTRY (Canada=1)			2.653***		-8.261**
CLEAN (Clean=1)			0.161		
PUBL (Published=1)		-2.105*	0.820		
METH (Mar Mod=1)	1.470 [~]	0.0431	-1.878*	1.325	11.561**
Constant	-3.790**	1.459 [~]	-1.080	18.392**	8.975*
R ²	0.906	0.601	0.603	0.887	0.788
Adjusted R ²	0.871	0.467	0.518	0.839	0.682
Sig. of Model	0.1%	5%	0.1%	1%	1%
N	12	17	35	11	13

* The values produced here are the unstandardized coefficients

[~] $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The Standardized Pratt's Measure by Thomas et al was used to measure the relative importance of APPR and FIN in days -5 to 5 and Month 0 for bidders and targets respectively (both APPR and FIN were significant in those periods).

Using the formula $d_j = \tilde{\beta}_j \tilde{\rho}_j / R^2$, the results are:

Bidders (Days -5 to 5) APPR: $(-0.425 * -0.391) / 0.601 = 27.65\%$

FIN: $(0.474 * 0.319) / 0.601 = 25.16\%$

Targets (Month 0) APPR: $(-0.513 * -0.605) / 0.887 = 34.99\%$

FIN: $(0.708 * 0.777) / 0.887 = 62.02\%$

The results of the above analysis suggest that to bidders, APPR and FIN are almost equally important (with relative importance of 27.65% and 25.16% respectively) in days -5 to 5. In the case of targets, the results suggest that FIN (with 62.02%) is relatively more important than APPR (with 34.99%) in Month 0.

5.9 Type of Financing (FIN) and Coverage (COV) in the Model

Table 13 presents the results when FIN and COV were put in the model. As the table shows, bidding firm shareholders experienced a mean significant loss of 1.0559% in days -1 to 0. The results for FIN were consistent with all previous analysis: it was significant; and cash (stock) was positively (negatively) related to changes in bidding shareholder wealth. COV, as has been the case in all previous analysis, was not significant.

For target firm shareholders, there was a mean significant gain of 18.9982% in the period -1 to 0. FIN was not significant (confirming the results under FIN and APPR-FIN²⁸). COV was not significant.

Table 13: Regression Analysis - FIN-COV

	Bidders -1 to 0	Targets -1 to 0
Mean CAR	-1.0559***	18.9982***
Standard Deviation	1.4956	10.5054
Regression Analysis [*]		
FIN (Cash=1)	2.237***	0.926
COV (Domestic=1)	-1.670	- 5.765
OUTCOME (Comp=1)	-1.143*	
CLEAN (Clean=1)	-0.974**	-7.696
PUBL (Published=1)	0.101	-17.907*
METH (Mar Mod=1)	-3.456***	3.847
Constant	2.733*	34.848*
R ²	0.643	0.772
Adjusted R ²	0.585	0.669
Sig. of Model	0.1%	1%
N	44	17

^{*} The values produced here are the unstandardized coefficients

^{*} $p < 0.10$, ^{*} $p < 0.05$, ^{**} $p < 0.01$, ^{***} $p < 0.001$

5.10 Approach (APPR) and Coverage (COV) in the Model

With APPR-COV in the model, the results are as presented in Table 14. In the overall period of Month 0, bidding firm shareholders had a small insignificant gain of 0.0653%. APPR turned out to be significant, which is not consistent with the analysis under APPR-

²⁸ However, FIN and FIN-COV have the same sample size suggesting that the two results could be based on the same observations.

FIN (we are unable to compare this with the results obtained when APPR was the only major variable in the model, as there was no analysis for Month 0 in that case).

Target shareholders gained a significant amount of 19.6171% in Month 0. For APPR, the results were consistent with all our previous analysis: mergers were significantly negatively correlated with changes in target shareholder wealth whilst the opposite was true for tender offers. For COV, domestic acquisitions were significantly negatively correlated with changes in wealth. International acquisitions were positively related to changes in wealth. These are consistent with the theoretical predictions. The problem is that this is the only instance that a model was generated for COV in Month 0. So considering the small sample size, it may not be prudent to draw any definite conclusions.

Table 14: Regression Analysis - APPR-COV

	Bidders Month 0	Targets Month 0
Mean CAR	0.0653	19.6171**
Standard Deviation	1.6317	12.7153
Regression Analysis*		
APPR (Merger=1)	-3.013*	-20.480**
COV (Domestic=1)	-0.730	-14.160*
CTRY (Canada=1)	0.795	-7.805~
DATA (Daily=1)	-2.398~	
Constant	3.808*	46.590**
R ²	0.603	0.980
Adjusted R ²	0.444	0.959
Sig. of Model	5%	1%
N	15	7

* The values produced here are the unstandardized coefficients

~ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Since APPR and COV were both significant in Month 0 for targets, the Standardized Pratt's measure was used to measure their relative importance.

Using the formula $d_j = \tilde{\beta}_j \tilde{\rho}_j / R^2$, the results are:

Targets (Month 0)	APPR:	$(-0.786 * -0.688) / 0.980 = 55.18\%$
	COV:	$(-0.543 * -0.349) / 0.980 = 19.34\%$

The results show that APPR is relatively more important than COV in Month 0. This is consistent with the analysis so far. All the analyses on APPR, particularly in Month 0, have suggested that it is significantly related to changes in target shareholder wealth but we have not been able to reach a firm conclusion on COV.

5.11 EXPLANATORY POWER OF THE VARIOUS MODELS

As evidenced by the R^2 and the Adjusted R^2 (Tables 5 to 14), the various models have quiet impressive explanatory powers and therefore account for significant proportions of the variations in shareholder wealth brought about by the takeover activities. There were a few instances, however, that the models yielded quite extreme R^2 s and Adjusted R^2 s. These include the models for RELN (.997 and .996 in Month 0 for R^2 and Adjusted R^2 respectively in the case of targets), and COV (.097 and .052 in days -1 to 0 for R^2 and Adjusted R^2 respectively in the case of bidders). Two points are worthy of mention here. First, some of the sample sizes are quite small and so it would be useful to know whether larger sample sizes would yield similar results. Second, it would have been more ideal (if

the data had permitted) to include all the major variables in the model simultaneously to investigate their collective explanatory power.

5.12 CONTROL VARIABLES

Tables 15 to 22 summarize the regression results for the individual control variables from the various models (all of these have already appeared in Tables 5 to 14). As the tables show, the models did not yield consistent results. A classic example is the results for bidders under Publication. In days -5 to 5, results from the NBID and COV models suggest that Publication is not a significant factor; the results from APPR suggest that published studies are significantly positively related to bidder shareholder returns; whilst results from APPR-FIN suggest that published studies are significantly negatively related to bidder shareholder returns. We were, therefore, unable to draw any definite conclusions on whether or not the control variables significantly impact on shareholder returns.

A possible exception is the results for CTRY. Table 15 suggests that for targets, Canada is significantly negatively related to shareholder returns in all three periods (in other words, Canadian target shareholders earn significantly less than their US counterparts). For bidders, CTRY was not significant in Month 0. In days -1 to 0, Canada was significant with a positive coefficient (in other words, in days -1 to 0 Canadian bidder shareholders earned significantly higher than their US counterparts but there was no

significant difference in the results for Month 0²⁹). We would later see that this is consistent with the results in Section 5.13.1 which investigates whether there is any significant difference in returns to Canadian and US shareholders from M&A.

Table 15 CTRY (Canada = 1)

Model	Bidder			Target		
	Month 0	-5 to 5	-1 to 0	Month 0	-5 to 5	-1 to 0
FIN	1.546			-13.846***	-15.854*	
APPR				-11.366***		
RELN				-18.425***		
APPR-FIN			2.653***			-8.261**
APPR-COV	0.795			-7.805*		

Table 16 DATA (Daily = 1)

Model	Bidder			Target		
	Month 0	-5 to 5	-1 to 0	Month 0	-5 to 5	-1 to 0
APPR				0.390		
COV	-1.165					
APPR-COV	-2.398*					

Table 17 SAMPLE (FTC = 1)

Model	Bidder			Target		
	Month 0	-5 to 5	-1 to 0	Month 0	-5 to 5	-1 to 0
FIN			1.769*			
APPR		0.592	2.076*		-0.156	1.232
NBID-APPR			-0.820*			

Table 18 OUTCOME (Completed = 1)

Model	Bidder			Target		
	Month 0	-5 to 5	-1 to 0	Month 0	-5 to 5	-1 to 0
FIN			-0.726			
APPR		-0.791	-0.706		2.443	-0.451
COV			-1.357*			
FIN-COV			-1.143*			

²⁹ No results were reported for days -5 to 5

Table 19 IND (General = 1)

Model	Bidder			Target		
	Month 0	-5 to 5	-1 to 0	Month 0	-5 to 5	-1 to 0
FIN	1.017		-0.686			
APPR		4.360**	1.760		-5.467	-3.665
RELN			0.162			-1.373

Table 20 CLEAN (Clean = 1)

Model	Bidder			Target		
	Month 0	-5 to 5	-1 to 0	Month 0	-5 to 5	-1 to 0
FIN	1.253		-0.370	6.385		-7.696
NBID			-0.474			-0.683
APPR		-3.272**	-0.746*	4.293	-1.023	-5.202*
RELN			2.199**			-10.027**
COV	-2.186*	0.366	-0.535		1.644	5.107*
APPR-FIN			0.161			
FIN-COV			-0.974**			-7.696

Table 21 PUBL ((Published = 1)

Model	Bidder			Target		
	Month 0	-5 to 5	-1 to 0	Month 0	-5 to 5	-1 to 0
FIN			0.161			-21.750
NBID		1.178	1.439*		-10.534	-10.174*
APPR		2.544*		1.331	3.649	
RELN			0.351			-9.708**
COV		0.558	0.237		-13.946*	7.149**
NBID-COV			1.097			-7.970
APPR-FIN		-2.105*	0.820			
FIN-COV			0.101			-17.907*

Table 22 METH (Market Model = 1)

Model	Bidder			Target		
	Month 0	-5 to 5	-1 to 0	Month 0	-5 to 5	-1 to 0
FIN	-0.509		-2.200**	8.637**		3.847
NBID		0.794	-2.00		11.113	12.579*
APPR		1.725*	-0.243	3.658*	6.443	6.616*
RELN			0.612			1.342
COV	0.761	2.679**			8.807	
NBID-COV			0.141			11.583*
APPR-FIN	1.470*	0.0431	-1.878*	1.325		11.561**
FIN-COV			-3.456***			3.847

5.13 OTHER SPECIFIC VARIABLES OF INTEREST: COUNTRY, PUBLICATION & TIME

Part of the objectives of this study was to investigate any differences in the results of the following categories of studies:

- a. *Canada and US*: to investigate whether there are any inter-country differences in US and Canadian studies
- b. *Published and Unpublished studies*: to investigate the suggestion in the literature that published studies yield more significant results than unpublished ones.
- c. *1970s and 1980s*: to investigate whether the impact of M&A on shareholder wealth has significantly changed over time

The Independent-Sample T Test was used to investigate these differences. A test of normality showed that there were some deviations from normality. In a way, this confirmed the whole basis of the analysis in this study: that is, the data base as a whole is not homogenous and that it was necessary to divide it into more homogenous groups based on various criteria such as type of financing, number of bidders, etc. The t-test results are still deemed reliable as the method is robust to non-severe deviations from normality. It was, however, deemed appropriate to reinforce the results of the t-test with the nonparametric test (specifically, the Kolmogorov-Smirnov Test³⁰).

³⁰ The *p*-values of the Kolmogorov-Smirnov tests are asymptotic. Considering the fact that some of the sample sizes are quite small, this could raise some concerns. Fortunately the two methods are used to cross-check each other and as would be seen in the results, except for 1 instance (out of 18), they yield very consistent results.

5.13.1 Canada and US Studies

Table 23 Comparison of Returns to Canadian and US Shareholders

	Days -1 to 0		Days -5 to 5		Month 0	
	Bidders	Targets	Bidders	Targets	Bidders	Targets
Canada	1.7575	12.0109	0.3013	15.2745	1.0796	12.5313
US	-0.5202	17.2539	-0.4507	26.2139	0.3543	20.3315
Difference is sign. at:						
T-Test	0.1%	1%	N/S*	1%	N/S*	1%
Nonparametric test (K-S ⁺) Test	0.1%	5%	N/S*	0.1%	N/S*	0.1%
<i>Sample size: Canada</i>	8	11	8	11	23	23
<i>US</i>	165	114	98	85	76	55

*Not Significant

⁺Kolmogorov-Smirnov Test

For the period of Month 0 as a whole, both the T-test and the nonparametric test indicate that US target firm shareholders experienced a significantly higher gain than their Canadian counterparts (20.3315% and 12.5313% respectively). For days -5 to 5, again US target firm shareholders gained significantly higher returns than their Canadian counterparts (26.2139% compared to 15.2745%). And so was the case in the immediate 2-day announcement period of -1 to 0 (17.2539% and 12.0109% for US and Canada respectively). In the case of bidders, Canadian bidding firm shareholders experienced a higher gain than their US counterparts in Month 0 (1.0796% and 0.3543% respectively) but the difference was not significant. For days -5 to 5, Canadian bidders attained a positive (albeit small) return whilst US bidders attained a small negative return but the difference was not significant. It was only in days -1 to 0 that the returns to Canadian bidders (1.7575%) was significantly higher than the returns to their US counterparts (loss of 0.5202%). The conclusion one draws from the above analysis is that, US target firm

shareholders gain significantly higher returns than Canadian target firm shareholders. On the other hand, though Canadian bidding firms attain higher returns than their US counterparts, the difference is not significant (except for days -1 to 0). This conclusion is consistent with the results of the analysis done for the control variables in section 5.12

5.13.2 Published and Unpublished Studies

Table 24 Comparison of Shareholder Returns in Published and Unpublished Studies

	Days -1 to 0		Days -5 to 5		Month 0	
	Bidders	Targets	Bidders	Targets	Bidders	Targets
Unpublished	-0.8495	23.9959	-0.8497	30.4867	-0.3629	18.2067
Published	-0.2926	13.5258	-0.1287	20.4768	0.5902	18.0244
Difference is sign. at:						
T-Test	1%	0.1%	10%	0.1%	N/S*	N/S*
Nonparametric test (K-S ⁺) Test	0.1%	0.1%	5%	0.1%	N/S*	N/S*
Sample size: <i>Unpublished</i>	38	39	39	43	7	3
<i>Published</i>	135	86	67	53	92	75

*Not Significant

*Kolmogorov-Smirnov Test

In the overall period of Month 0, there was no significant difference in the return of target firm shareholders in published and unpublished studies. In days -5 to 5, targets in unpublished studies actually attained a significantly higher return than those in published ones (30.4867% and 20.4768% respectively). Similarly, in period -1 to 0, unpublished studies yielded significantly higher results than published ones. For bidders, the returns in published studies were significantly higher than those in unpublished studies for the

periods covering days -5 to 5 and -1 to 0. In Month 0, although returns to bidders in published studies were still higher, the difference was not significant. Thus the suggestion in the literature that published studies yield significantly higher results than unpublished ones and that any review based solely on published studies would yield upwardly biased results is not supported by this data. Admittedly, the proportion of unpublished to published studies in Month 0 is very small (especially for targets). But even if the results for Month 0 are discarded, there is still no evidence to suggest that results from published studies are systematically significantly higher than unpublished ones.

5.13.3 1970s and 1980s

Table 25 Comparison of Shareholder Returns in the 1970s and 1980s

	Days -1 to 0		Days -5 to 5		Month 0	
	Bidders	Targets	Bidders	Targets	Bidders	Targets
1970s	0.2567	12.5467	-0.4314	22.1222	1.2100	16.4817
1980s	-0.3421	18.3179	-0.4057	26.3273	0.0991	19.4771
Difference is sign. at:						
T-Test	N/S*	1%	N/S*	N/S*	N/S*	N/S*
Nonparametric test (K-S ⁺) Test	N/S*	10%	N/S*	N/S*	5%	N/S*
Sample size: 1970s	6	6	7	9	20	12
1980s	87	76	67	74	23	17

*Not Significant

⁺Kolmogorov-Smirnov Test

For targets, there was no significant difference in the results for Month 0 and days -5 to 5. It was only in days -1 to 0 that the returns to targets in the 1980s was significantly higher than the results for the 1970s. This suggests that returns to targets in the event month in the 1970s and 1980s did not significantly change. It is possible that the market became

more efficient in the 1980s so more of the gains were being captured in the immediate 2-day announcement period of -1 to 0.

In the case of bidders, returns in the 1970s and 1980s for both days -5 to 5 and -1 to 0 were not significantly different. In the whole period of Month 0, the mean return in the 1970s was higher than in the 1980s. Whilst the T-Test suggests that the difference was not significant, the nonparametric test suggests that it was. We are therefore unable to draw any definite conclusion for Month 0. If the difference is not significant as the T-Test suggests, then the results would be consistent with that of the targets, which also found no significant changes between the two (2) decades. However, if the mean return in the 1980s was significantly less than that of the 1970s as the nonparametric method suggests, then one begins to wonder where the difference went as it did not seem to have gone to the benefit of the target shareholders. A possible explanation, in that circumstance, would be that as the market became more competitive in the 1980s, bidding firms had to spend more on such things as public relations, advertising, lobbying and legal bills. Such expenditures reduce benefits to bidding firm shareholders but do not benefit target firm shareholders. It is important to note that in all the analyses in this section, this is the only instance where the T-Test and the nonparametric test yielded inconsistent results.

6.0 CONCLUSION

Despite of the fact that mergers and acquisitions (M&A) are among the most researched areas in finance, some of the basic issues still remain unresolved. This raises the need for a review of the existing literature to help resolve some of the unresolved issues. The methodology that has traditionally been used is the narrative review. This study, however, uses the more systematic and replicable method of meta-analysis to investigate the impact of M&A on shareholder wealth in Canada and the US.

6.1 SUMMARY OF MAJOR FINDINGS

6.1.1 Returns to Shareholders

The results in this study suggest that bidding firm shareholders generally do not benefit significantly from takeover activities. In month 0, the returns ranged from -0.6233% to 0.4682% which implies that they generally earned less than 0.5% in the event month³¹. It is important to note that none of these returns was significantly different from zero. It is also interesting to note that for the other periods (that is days -5 to 5 and -1 to 1), in the only instances that the returns were significantly different from zero, the returns were actually negative (albeit small). This suggests that bidding firm shareholders who dispose of their shares around the immediate announcement period actually stand the risk of losing some small but significant amounts. Target firm shareholders, on the other hand, gained significantly in all the periods in all the models. In the overall period of Month 0,

³¹ Excluding the three categories of studies country, publication and time, which are discussed below.

for instance, the minimum gain was 10.0667% (which, incidentally, happened to be unusually low compared to the others) whilst the maximum gain was 23.2871%³². These results are generally consistent with the results in other reviews such as Jensen and Ruback (1983), Jarrell et al (1988) and Datta et al (1992) which also found little or no changes in the wealth of bidding shareholders but large and significant gains to target shareholders.

The comparison of returns to US and Canadian shareholders yielded some interesting results. US bidding firm shareholders earned less than their Canadian counterparts in all three periods. In fact, in none of the periods did Canadian bidding firms experience a loss but US bidders experienced losses (albeit small) in two of the three periods (specifically, days -5 to 5 and -1 to 0). The differences were, however, significant in only days -1 to 0 suggesting that in the overall picture, there are no significant differences between US and Canadian bidders. On the other hand, US target firm shareholders gained significantly higher returns than their Canadian counterparts in all the three periods. In Month 0 for instance, US targets gained 20.3315% but Canadian targets gained 12.5313%. This may be due to the fact that the US acquisition market is more competitive than the Canadian one. US bidders are therefore compelled in the bidding process (as Auction Theory predicts) to surrender more of the takeover gains in favour of target firms. The question that comes up then is, if the US bidders give up more of the returns which makes their targets earn significantly more than their Canadian counterparts, why are they (the US bidders) not earning significantly less than Canadian bidders. This may be due to the fact

³² Excluding the three categories of studies country, publication and time, which are discussed below.

even though what US bidders give up (due to their more competitive market) may not be significant to them (by virtue of their large sizes), it translates into significant gains to targets (which are usually relatively smaller in size).

The study also investigated the suggestion in the literature, particularly on meta-analysis, that published studies yield more significant results than unpublished ones (Hunter and Schmidt, 1990; Egger and Smith, 1998). In the overall period of month 0, there was no significant difference between the results of published and unpublished studies for both bidders and targets³³. In the case of periods -5 to 5 and -1 to 0, returns to bidders were significantly higher in published studies whilst returns to targets were significantly higher in unpublished studies. Hence, there was no evidence that unpublished studies systematically yield less significant results than published ones. That theory, which has virtually come to be accepted as the truth, may indeed just be a myth.

Using the 1970s and the 1980s, the study also investigated whether returns to shareholders have changed over time. For targets, there were no significant differences in returns in the wider periods of both Month 0 and days -5 to 5. There was however a significant increase in the 1980s over 1970s in days -1 to 0. This could suggest that although returns to targets in the event month as a whole did not change significantly, the market became more efficient in the 1980s leading to a larger proportion of the gains being captured in the immediate 2-day announcement period. Hence, there was no

³³ The Month 0 results may need further investigation due to the small sample size of the unpublished studies

evidence to support the finding by Datta et al (1992) that returns to target shareholder returns have increased over time. In the case of bidders, there were no significant changes in returns in both days -5 to 0 and -1 to 0 . There was, however, inconsistency in the results for Month 0 (whilst the T-Test suggested that there was no significant change, the non-parametric K-S test suggested that there was a significant decline in the 1980s compared to the 1970s). As a result, no definite conclusion was arrived at.

6.1.2 Factors Influencing Wealth Creation

The results suggest that type of financing (FIN) is a significant factor in determining the shareholder wealth effects of M&A. Cash was significantly positively related to changes in shareholder wealth for both bidders and targets; stock, on the other hand, had a negative impact on both bidders and targets. This was consistent with our initial expectations that due to such factors as the signaling role of cash (Myers and Majluf, 1984), different tax implications of cash and stock, etc, cash is more likely to yield beneficial results to both bidding and target firm shareholders. This evidence is consistent with the findings of Datta et al.

The number of bidders was significantly related to bidder shareholder wealth: bidders gain in single bidder acquisitions and lose in multiple bidder acquisitions. This is consistent with our initial expectations which suggested that due to the competitiveness in multiple bidder acquisitions, bidders may actually lose (as auction theory suggests). In

the case of targets, the number of bidders turned out to be an insignificant factor. Datta et al also found that the number of bidders was significant to bidders but not to targets.

The variable APPROACH was significantly related to target shareholder wealth (especially in the overall period of Month 0): mergers were negatively related whilst tender offers were positively related (as also found by Datta et al). This was consistent with our expectations. We were, however, unable to reach a definite conclusion in the case of bidders.

Coverage (that is whether an acquisition is domestic or international) was not significant to bidders (contrary to what the literature on M&A and FDI had suggested). The results on targets were, however, not very conclusive.

Table 26: Summary of Major Findings

	Bidders	Targets
Returns to Shareholders	Insignificant changes in wealth	Significant gains
<i>Classification of shareholders by:</i>		
i. Country (Canada or US)	No significant differences between earnings of US and Canadian bidders	US targets earn significantly more than Canadian targets
ii. Publication (Published or Unpublished)	In overall period of Month 0, results inconclusive; in days -5 to 5 & -1 to 0, published studies higher than unpublished studies	In overall period of Month 0, results inconclusive; in days -5 to 5 & -1 to 0, published studies less than unpublished studies
	<i>Conclusion: no evidence that published studies systematically yield more significant results than unpublished ones</i>	
iii. Time (1970s or 1980s)	No significant difference between returns in the two decades for days -5 to 5 and -1 to 0; results for Month 0 inconclusive	No significant difference between returns in the two decades; more of the gains are however captured in the two-day announcement period of -1 to 0
Impact of Financing (Cash or Stock)	Cash (stock) had significantly positive (negative) influence	Cash (stock) had significantly positive (negative) influence
Impact of No. of Bidders (Single or Multiple)	Single (Multiple) had significantly positive (negative) influence	Not significant
Impact of Approach (Merger or Tender Offer)	Inconclusive	Merger (tender offer) had significantly negative (positive) influence
Impact of Coverage (Domestic or International)	Not significant	Inconclusive

6.2 Benefits

As was stated in the introduction, the idea of a single decisive study may only be a myth (Light and Pillemar, 1984). A single study, no matter how well done, is unlikely to resolve a minor issue let alone an issue as major as the wealth effect of M&A. This is

primarily because it is practically impossible for a single study to examine all relevant aspects of an issue. This study has the advantage of bringing together the results of different studies that have examined different aspects of M&A and wealth creation in order to get more complete and generalizable results. The results could therefore be considered more reflective of the cumulative knowledge that has been built up over decades of research.

The study has also built on Datta et al (1992) by including relevant studies that have come up since that study was published³⁴ as well as incorporating some variables that were left out of that study. One of the most important of these variables is publication (that is, whether or not a study has been published). It has been extensively quoted in the literature, mostly without any empirical testing, that published studies systematically yield more significant results than unpublished ones. This was tested in this study and, surprisingly, there was no evidence to support it.

In the case of Canadian M&A (which was not part of the Datta et al study³⁵), this study presented an opportunity to use the more scientific method of meta-analysis to cumulate the various findings on the effects of M&A on stockholder wealth. The beauty of the meta-analytic method is that unlike the traditional narrative review method, the results of this study can be independently verified through replication.

³⁴ As already noted elsewhere in this study, the most recent study used by Datta et al was published in 1989

The findings of this study provide valuable information to academics, financial analysts, corporate (finance) managers and stockholders in their pursuit of academic, professional and investment interests. Particularly in this day and age when M&A have become a virtual part of the corporate world.

It is also hoped that the successful use of meta-analysis in this study would go a long way to promote the use of meta-analysis in business research in general and research in finance in particular. Whilst meta-analysis has been so extensively used in some fields (particularly the social and medical fields) to the extent of achieving a 'revolutionary' status (Hall and Rosenthal, 1995; Bausell and Purohit, 1995), the methodology has been relatively very little used in business research. Hopefully, this study has demonstrated to other business researchers that, in spite of the hurdles, meta-analysis is doable and beneficial and help encourage its use. After all, the foundation of science is the cumulation of knowledge from the results of many studies (Hunter and Schmidt, 1990).

6.3 *Limitations*

The analysis in this study has been based on the event month (and sub-periods of the event month). This is primarily because there does not appear to be enough detail in the relatively small number of studies examining the long-term wealth impact of M&A to permit meta-analysis. The results may therefore be viewed as being more reflective of the short-term impact of M&A, as opposed to long term. However, if we consider the fact

¹⁵ The Datta et al study used only US data. No meta-analytic study on M&A and shareholder wealth based

that in an efficient market (a basic assumption of the event study methodology), prediction errors reflect investors' unbiased assessment of the present value of the long-term benefits of the M&A, then the results could also, at least, be indicative of the long-run impact of M&A.

Some of the sample sizes in the study have been quite small. This has primarily been due to the fact that many studies had to be discarded due to their lack of sufficient information. In such instances, the results were deemed reliable only to the extent that they were corroborated by results from the analysis of larger samples.

Due to the limitations within the data, it was not possible to get all the major variables of interest in a single model. As a result a number of models had to be built even though our preference would have been to get a single overall model.

6.4 *RECOMMENDATIONS*

One of the important revelations of this study has been the relative lack of Canadian empirical studies on M&A compared to the US. Considering the fact that M&A have become an important part of the corporate world and that they have important implications on various sectors of the society *and* the society as a whole, it is recommended that more empirical studies be conducted based on Canadian evidence. For as we found out in this study, the effect of M&A in Canada could be different from that

on Canadian evidence was located in the literature

which pertains in the US (e.g. Canadian target shareholders earned significantly less than their US counterparts) which could mean that the factors at play in the Canadian acquisition market could be different from that of the US.

As meta-analysis becomes more and more important as a research methodology, it would be appropriate for primary researchers to provide enough information in their studies to permit their use in meta-analysis. In this study, for instance, many studies could not be used because they did not contain enough information.

6.5 *Directions for Future Research*

This study confirmed the dominant view in the literature that bidding firm shareholders do generally not benefit from takeover activities and that all the benefits, almost invariably, go to target shareholders. The question then is, why would any firm want to be on the bidding side of the M&A transaction? Especially so when it is the bidding firm that often initiates the takeover activity. There have been some suggestions in the literature that overall (that is, putting bidding and target firm gains/losses together), takeovers generate net benefits (Jensen & Ruback, 1983; Berkovitch & Narayanan, 1993). The question still remains, though, that why would any bidding firm want to enter into a transaction that generates net benefits but of which they hardly partake. This is an area that calls for further investigation.

In addition to knowing the significance and the direction of effect of the various factors that impact on shareholder wealth effects of M&A, it would be very useful to know the relative importance of the significant factors. This study had limited success in that direction as not all the variables of interest could be entered into a single model. There is the need for further research into that area. In that regard, the Standardized Pratt's Measure by Thomas et al is recommended as a simple and effective method that could be used.

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Sridharan, U.V. & Reinganum, M.R. (1995) *Determinants of the Choice of the Hostile Takeover Mechanism: An Empirical Analysis of Tender offers and Proxy Contests* Financial Management v24 pp.57-67

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APPENDIX A: **Annotated Bibliography of Studies Based on US Data**³⁶

Agrawal, A., Jaffe, J.F. and Mandelker, G.N. (1992) "THE POST-MERGER PERFORMANCE OF ACQUIRING FIRMS: A RE-EXAMINATION OF AN ANOMALY" Journal of Finance (47) 1605-1621

The paper studies a sample of mergers between 1955-1987 and measures five-year post-acquisition performance after adjusting for firm size effect and beta risk. They found that stockholders of acquiring firms suffer a statistically significant wealth loss of about 10% over the five years following merger completion. They concluded that the efficient market anomaly of negative post-merger performance highlighted in Jensen and Ruback (1983) is unresolved. The anomaly holds in the 1950s, 1960s and 1980s but not for the 1970s. The market does not appear to become more efficient over time. A finding of systematic post merger underperformance has three important implications. First, it is inconsistent with the concept of efficient capital markets. Second, it calls into question a large body of research on mergers which examine returns around announcement dates, implicitly assuming that markets are efficient since returns following the announcement are ignored. Thirdly, it buttresses certain studies such as Ravenscraft and Scherer (1987) and Herman and Lowenstein (1988) which show poor accounting performance after takeovers. Other interesting results produced by the study are:

³⁶ Please note that the critiques in this section are to be regarded as a demonstration of the fact every study has its limitations but not as comprehensive critiques

1) In contrast to popular belief, underperformance of acquirers is worse in non-conglomerate mergers than in conglomerate mergers. 2) Announcement period returns are higher for acquirers in tender offers than in mergers and post acquisition performance is worse for mergers financed by equity rather than cash.

CRITIQUE

1) The study takes a long term view of post merger performance. 2) In the two methodologies used: the Dimson and Marsh (1986) implicitly assumes that each beta is constant over the entire post-acquisition period; the RATS implicitly assumes that beta is identical for all acquiring firms. Do either of these hold? 3) Their results are inconsistent with other studies such as Bradley and Jarrell (1988) and Franks, Harris and Titman (1991) which did not find significant underperformance over three years after acquisition (this, Agrawal et al) believe, could be due to deficiencies in the methodologies of the prior studies).

Alberts, W.W. and Varaiya, N.P. (1989) "ASSESSING THE PROFITABILITY OF GROWTH BY ACQUISITION – A 'Premium Recapture' Approach" International Journal of Industrial Organisation (7) 133-149

The paper investigates whether acquiring firms have been able to improve the financial performance of their acquirees to sufficiently recapture the large premiums they pay and, in addition, create sustainable increments of 'intrinsic' value for themselves. The authors develop the Required Improvements Model (RIM) to show the performance improvement required to recapture any premium paid and to create value for the acquiring company. The RIM is used to determine the specific

performance improvements necessary to bring about value creation for the new parents of 137 acquisitions made between 1976 and 1984. They then use historical rate of return data to show that for typical acquirees, the required improvements call for levels of performance that are difficult to attain and sustain in US industrial markets. In fact, they argue that “the odds are that acquiring companies have not been able to recapture their premiums, let alone create sustainable increments of value for themselves”. The acquiring companies were guilty of over-optimism (making implausible projections), poor analysis (evaluating incorrectly the implications of plausible projections) or both. In conclusion, they lend their support to the group that feels uneasy about judging the consequences of growth by acquisition by observing the short-term reaction of the stock market. They also state the need for acquiring companies to revise the ‘management technology’ they use to guide the design and implementation of their diversification strategies.

CRITIQUE

1) The RIM required the input of some futuristic information such as rate of return, retained earnings and earnings growth rate all of which had to be estimated. 2) Since the authors could not obtain the data necessary to definitely answer the question on whether the premiums paid would be recaptured fully, they used three indirect methods: a) frequency distribution of spreads generated historically in the US by large industrial companies in general; b) financial characteristics of the 3 sample groups and of the companies that bought them and c) findings of a study by Ravenscraft and Scherer (1987) of some financial consequences of a large number of acquisitions

undertaken in US between 1952 and 1974. They then add that these three sources taken together 'at least *suggest* what the answer is likely to be'!

Allen, P.R., and Sirmans, C.F. (1987) "AN ANALYSIS OF GAINS TO ACQUIRING FIRM'S SHAREHOLDERS The Special Case of REITs" Journal of Financial Economics (18) 175-184

The study uses capital market data to measure the effects of mergers on the wealth of shareholders when both the buyer and the seller are real estate investment trusts (REITs) over the period 1977-1983. This was to determine whether the same pattern of wealth distribution exists for REIT mergers as for corporate mergers as a whole. Employing standard event study techniques, a statistically significant wealth increase was detected for acquiring REITs. This finding contrasts with those of other merger studies for standard corporations which find that, on average, acquiring firm's shareholders do not experience statistically significant wealth increases and in some cases suffer a loss. The primary source of the value seems to be improved management of the acquired trust's assets. No relationship was found between shareholder returns and utilization of tax losses.

CRITIQUE

1) The paper raises the important issue of possible inter-industry differences in the effects of M&A on stockholder wealth. 2) The sample is potentially biased. a) It was limited to successful acquisitions only. b) The form of transaction in the sample was predominantly exchange of stocks: of the 38 events, only three involved cash tender offers, and one offered target shareholders a choice between cash and stock.

Amihud, Y., Lev, B. and Travlos, N.G. (1990) "CORPORATE CONTROL AND THE CHOICE OF INVESTMENT FINANCING: THE CASE OF CORPORATE ACQUISITIONS" The Journal of Finance (45) 603-616

It is difficult to test empirically the relation between managers' control and the means of investment financing, since no information is provided in firms' financial statements on the financing of individual investment projects. One exception is the case of corporate acquisitions where the means of financing – cash or stock – is a matter of public record. The paper therefore uses corporate acquisitions to examine the relation between means of financing a major investment and managerial control, measured by the fraction of the firm's stock held by corporate insiders. The results show that the higher the managerial ownership fraction of the acquiring company, the larger the probability of the acquisition being financed by cash rather than by stock. This can primarily be explained by the fact that managers who value control and hold a significant ownership fraction of their firm's stock will be reluctant to dilute their holdings and risk a loss of control by issuing stock to finance investments. They are more likely to finance new investments with cash (or debt). An alternative interpretation that could be advanced is one based on information asymmetry between corporate insiders and uninformed outside investors. If insiders hold a substantial quantity of their company's shares because they believe them to be undervalued, they will be less willing to issue new stock to finance acquisitions. The study also examines the information effect of the method of acquisition financing in conjunction with managerial ownership, as reflected in the reaction of bidders' stock prices to the

acquisition announcement. The interesting revelation from this test is that the negative stock price reaction to stock-financed acquisitions, which has been observed in several prior studies as well as the present study, is mostly associated with firms where managerial ownership is low (below 5%). Given the greater potential cost to managers of losing control under stock financing, the fact that they still apply this method of payment may signal to investors that the acquisition is not value decreasing. The authors conclude by saying that in a more general context, their findings suggest that corporate capital decisions may sometimes be motivated by corporate control decisions. It should be noted, though, that the sample was limited to very large firms (1980 list of fortune 500 companies) and also to a relatively short period of 1981-1983.

Berkovitch, E. and Narayanan, M.P. (1993) "MOTIVES FOR TAKEOVERS: AN EMPIRICAL INVESTIGATION" Journal of Financial and Quantitative Analysis (28) 347-362

Three major motives for takeovers have been advanced in literature: synergy, agency and hubris. Existing empirical evidence is unable to clearly distinguish between these motives probably due to the simultaneous existence of all three in any sample of takeovers. This paper suggests a way of distinguishing between the 3 competing hypotheses by looking at the correlation between target and total gains instead of depending on average gains as in previous studies. They argue that the correlation should be positive if synergy is the motive, negative if agency is the motive and zero if hubris is the motive. Using a sample of 330 tender offers made during 1963-1988,

the three hypotheses are tested for the entire sample and for subsamples of positive and negative total gains. It is found that, on average, takeovers yield positive total gains. This occurs in about 75% of takeovers in the sample. In the subsample of positive total gains, the correlation between target and total gains is positive indicating that the synergy motive dominates. In the subsample of negative total gains, the correlation is negative, indicating that the dominating motive is agency. There is evidence that hubris exists, at least in the positive total gain subsample. It was also found that in takeovers with positive total gains, the total gain increases with competition for the target. In takeovers with negative total gains, the total gains decrease with competition. This implies that in this sample, competition is motivated by agency rather than by synergy and that competition will not eliminate agency problems where they exist but only aggravate them. In summary, while synergy is the reason for the majority of takeovers, there is strong evidence that agency and hubris motivate many takeovers. However, agency, not hubris, seems to be the major reason for the existence of value reducing acquisitions.

CRITIQUE

1) The major problem with the paper is the implicit assumption that results of the takeovers will follow what is predicted by the motive behind it. If there is one lesson taught by empirical research, it's that reality doesn't always follow theory. In fact, Roll (1986) confirms this when he points out that synergy could still result even when the motive is hubris. 2) The sample is limited to tender offers to the total exclusion of mergers even though the two are documented to yield different results.

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

The paper estimates the magnitude of synergistic gains accruing to target-firm and acquiring-firm shareholders. It also examines the factors that determine the division of the gains between the shareholders of the two firms and also documents how the division of the total gains created have changed with the changing environment of the tender process. From their analysis, based on a sample of 236 successful tender offer contests occurring between 1963 and 1984, they make a number of conclusions. 1) Successful tender offers generate significant synergistic gains and lead to a more efficient allocation of corporate resources (the combined value of the target and acquiring firms in the sample increase by 7.4% on average). 2) Stockholders of both target and acquiring firms realize significant positive abnormal returns. However, stockholders of the target firms capture most of the gains. 3) Both the rate of return and the dollar gains to target stockholders had increased over time, whereas the returns to stockholders of acquiring firms had decreased. 4) The net effect of multiple bidder contests is to increase returns to target firms and decrease returns to acquiring firms. 5) Increased regulations, developments in the investment banking industry and the use of defensive tactics have been a zero-sum game: increased gains to the target stockholders have come at the expense of stockholders of acquiring firms.

CRITIQUE

1) Their definition of the synergistic gain assumes that corporate acquisitions effected through interfirm tender offers have no effect on the wealth of senior claimants such as bondholders. Failure to consider the effect of merger on the various classes of assetholders could lead to a biased estimate of the total value created by merger (Dennis, D.K. and McConnell, J.J., 1986). 2) Their conclusion of positive abnormal gains to acquiring firms is quite deceptive. Overall, only 47% of the total acquirers in the sample had positive abnormal returns as compared to 95% by target firm stockholders. In fact in the most recent sub-period, acquiring firms actually suffered a significant abnormal loss. 3) The 'entry requirements' into their sample was quite liberal – it included firms which purchased as little as 2% of the target firm. This, in their view, was to avoid an arbitrary cut-off point.

Choi, D. (1991) "TOEHOLD ACQUISITIONS, SHAREHOLDER WEALTH AND THE MARKET FOR CORPORATE CONTROL" Journal of Financial and Quantitative Analysis (26) 391-407

The paper examines the valuation consequences of control-related events subsequent to toehold acquisitions. Using a sample of 322 toehold acquisitions occurring between 1982 and 1985, the paper finds evidence that toehold acquisitions facilitate value-enhancing control transfers. The types of control transfers include not only takeovers but also internal mechanisms such as proxy fights and management turnovers. Toehold targets experiencing such control transfers exhibit an abnormal increase in share value. The absence of control transfer events lowers share price, which is

inconsistent with the hypothesis that toehold acquisitions reveal information pertaining to asset undervaluation. The results suggest that the positive valuation effect associated with toehold acquisitions reflects the expected benefits of subsequent control transfers. The paper also finds evidence that toehold acquisitions are preceded by negative abnormal returns for the toehold targets, implying that poor performance and/or management inefficiency encourage toehold acquisitions that are likely to be followed by value-enhancing control transfers. The results support the position that SEC. 13D disclosure requirements might deter even value-enhancing toehold bids since it effectively limits the bidder's potential benefits from toehold acquisition with the rest going to other shareholders, giving rise to a free rider problem. Thus it undermines the efficient functioning of the market for corporate control.

CRITIQUE

- 1) The results are also consistent with other hypotheses unrelated to value enhancing control transfers such as bidder overpayment and wealth transfer hypotheses (those hypotheses are, however, silent about the likelihood of the valuation consequences of post-toehold control transfers through internal means such as proxy fights and management turnovers).
- 2) The sample is from a relatively short period of 1982-1985.
- 3) There is a drastic surge in CAR immediately prior to the SEC. 13D filing dates which are used as event dates unless there is a prior announcement in the Wall Street Journal. This indicates the possibility of leakages prior to the event dates used and that could lead to underestimation of the event-induced wealth changes.

Clark, K. and Ofek, E. (1994) "MERGERS AS A MEANS OF RESTRUCTURING DISTRESSED FIRMS: AN EMPIRICAL INVESTIGATION" Journal of Financial and Quantitative Analysis (29) 541-565

The paper tests the effectiveness of the use of mergers to restructure distressed firms by studying a sample of 38 takeovers of distressed firms occurring between 1981 and 1988. Five post-merger performance indicators are used. These are: 1) qualitative variable (success, marginal or failure); 2) estimated return to bidder from investment in target (annualised); 3) beta-adjusted excess return to the combined firm in year +0 to +2; 4) industry excess return to the combined firm in year +0 to +2 and 5) combined firm EBITD³⁷/sales in year +2 less industry median. All five measures indicate that bidders had negative post-merger performance. Much of the post-merger decline appears to have been caused by industry factors. They classify 20 of the 38 restructuring attempts as failed, 9 as marginally successful and 9 as success. Nevertheless, they could not conclude that mergers are a poor choice for restructuring distressed targets because they do not know the success rates for alternative methods of restructuring, or the consequences of doing nothing. The market shows some ability to forecast restructuring success. Abnormal period returns on the bidder's shares are positively and significantly related to the post-merger returns earned by bidders on the investments in the targets. Restructuring success is negatively related to the size of premium paid by the bidder for the target and positively related to the financial distress of the target. Higher levels of post-merger leverage for the combined

³⁷ Earnings Before Interest, Tax and Depreciation

firm are associated with worse post-merger performance. The smaller the target is relative to the buyer, the higher the likelihood of success.

CRITIQUE

1) The evaluation period is not the same for all the firms in the sample. 2) The authors acknowledge that their sample design causes relative size in their sample to be larger than is typical. 3) Post-merger data of acquired firms are usually buried in that of the acquiring firm so its isolation required a lot of discretion. 4) There is survivorship bias: the very poor performing ones dropped out of the sample.

Cotter, J.F., Shivdasani, A. and Zenner, M. (1997) "DO INDEPENDENT DIRECTORS ENHANCE TARGET SHAREHOLDER WEALTH DURING TENDER OFFERS?" Journal of Financial Economics (43) 195-218

Tender offers can result in important conflicts of interest between managers and shareholders of target firms. Whilst target shareholder gains are reported to be usually large in successful tender offers, target firm managers can suffer significant losses in compensation and other control benefits and thus often try to defeat such takeovers. This paper examines the role of target firm's independent outside directors during takeover attempts through tender offers by studying 169 tender offers over 1989-1992. They find that when the target's board is independent, the initial tender offer premium, the bid premium revision and the target shareholder gains over the entire tender period are higher, and that the presence of a poison pill and takeover resistance lead to greater premiums and shareholder gains (about 20% higher). They conclude that independent outside directors enhance target shareholder gains from tender offers

and that boards with a majority of independent directors are more likely to use resistance strategies to enhance shareholder wealth not to entrench incumbent managers. They also note that, the higher target shareholder gains come at the expense of returns to bidder firm shareholders. These results corroborate evidence presented by Brickley, Coles and Terry (1994).

CRITIQUE

1) The sample period of 1989-1992 was very short as compared to similar studies. 2) Brickley, Coles and Terry (1994) report that the results one derives are sensitive to the way in which independent outside directors with potential business ties (excluded from the analysis) are defined. In fact, the authors of this paper concede that when they classify such directors as independent outsiders, it reduces the significance of the independent board variable. It is therefore not clear how the classification affects the results.

Datta, D.K., Pinches, G.E. and Narayanan, V.K. (1992) "FACTORS INFLUENCING WEALTH CREATION FROM MERGERS AND ACQUISITIONS: A META ANALYSIS" Strategic Management Journal (13) 67-84

Using meta-analysis, the paper analyses the empirical literature concerning the influence of various factors on shareholder wealth creation in mergers and acquisitions. The factors considered were: regulatory changes, number of bidders, bidder's approach (i.e. merger or tender offer), mode of financing (i.e. cash or stock), and type of merger or acquisition (i.e. conglomerate or non-conglomerate). They found that whilst target firm shareholders gain over 20% on merger announcement,

acquiring firm shareholders gain less than one half of 1%. Shareholder gains are lower in stock-financed transactions for both bidders and targets. Multiple bidders and conglomerate acquisitions have a negative impact on the wealth of bidding firm shareholders. On the other hand, targets benefit more in tender offers than mergers. Regulatory changes in 1968 and 1969 benefited target shareholders. Some of the conclusions are significantly different from those of 2 previous (narrative) reviews. Compared to Jensen and Ruback (1983), their results provide a much more pessimistic picture of bidder gains from M&A. Jensen and Ruback (1983) did not isolate the effect of the time frames over which returns are estimated. The present study shows the influence of a two-day (-1,0) announcement period vs. a wider (month zero) period on the bidder's gains. Although Jarrell et al (1988) reported declining returns to bidders in the 1970s and 1980s (relative to the 1960s), this paper finds the decline insignificant. While Jensen and Ruback (1983) find that bidders gain in completed mergers and do not lose in not-completed mergers, this paper finds the distinction of no consequence. The three papers, however, agree that a merger or acquisition results in significant gains for targets. Consistent with Jarrell et al (1988), the paper also finds that gains to target were higher in the 1970s and 1980s compared to the 1960s. In addition to the above, this paper finds the mode of payment as the most significant explanatory factor in the wealth gains to both bidders and targets. Whilst the two narrative reviews elaborate on the number of bidders, this paper suggests that this factor is significant only from the perspective of bidding firm shareholders. They also provide modest evidence of the effect of non-conglomerate mergers on bidder's wealth. The practical implication of the findings of this study is

that in deciding on mergers and acquisitions, the explanatory factors and their correlation with wealth gains should be considered by both bidders and targets. The authors conclude that their results demonstrate the benefits of meta-analytic synthesis over narrative reviews.

CRITIQUE

1) Like any meta-analytic study, this study could only analyze variables that had been sufficiently investigated by primary researchers. 2) With an Adjusted R^2 of 0.414 and 0.373 for bidders and targets respectively, it is obvious that a substantial portion of the causes of the wealth changes still remain to be explained. 3) The authors acknowledge a possible publication bias. 4) There were classification problems. For instance, although the 'mode of payment' varied from all cash to all stock along a continuum, the paper identified only two levels for the analysis: cash or stock.

Davidson III, W.N., Dutia, D., and Cheng, L. (1989) "A RE-EXAMINATION OF THE MARKET REACTION TO FAILED MERGERS" Journal of Finance (44) 1077-1083

The study examines the revaluation of shares surrounding the cancellation of mergers over the years 1976-1985. They first classify failed mergers by the terminating party. They then examine the returns for the effects of subsequent merger activity. Their results generally confirm Dodd's (1980) finding that for target-cancelled mergers, there is 'a permanent revaluation' of the target shares. However, they discover that this condition holds only if there is a subsequent merger activity. Targets that do not become involved in subsequent merger activity have their abnormal returns return to pre-merger announcement levels regardless of who cancels the merger. When mergers

are cancelled by parties other than the bidder or target firm, there is no permanent revaluation (because, for these firms there are no anticipated subsequent mergers). A bidder's rejection of a target does not cause permanent target revaluation. Bidders generally do not gain from mergers that fail. Over the intervals -90 to 90 and -90 to 250, bidder Cumulative Prediction Errors (CPEs) are negative when mergers fail, but these CPEs are significant only when bidders and others (other than bidder and target) cancel the merger.

CRITIQUE

1) The authors acknowledge that several problems complicated accurate measurement of bidder returns. 2) In deciding who cancelled the merger, they took the Wall Street Journal announcement at face value.

Dennis, D.K. and McConnell, J.J. (1986) "CORPORATE MERGERS AND SECURITY RETURNS" Journal of Financial Economics (16) 143-187

This paper examines returns to merging firms' a) common stockholders b) preferred stockholders, both convertible and non-convertible and c) bondholders, both convertible and non-convertible. They found that: 1) acquired companies' common stockholders, convertible and non-convertible bondholders' gain, as do acquiring companies' convertible preferred stockholders. 2) acquired companies' non-convertible bondholders and acquiring companies' convertible and non-convertible bondholders and non-convertible preferred stockholders neither gain nor lose. 3) there is no evidence that acquiring companies' common stockholders lose and there is statistically reliable evidence that they gain. 4) the dollar value of both acquired and

acquiring firms increase, as does the dollar value of the combined acquired and acquiring companies. Explanation for the differential effect of merger announcements on the various classes of senior securities may lie in the differential treatment accorded them in final terms of the merger. Two alternative hypotheses have been offered to explain returns to merging firms' senior securities. The coinsurance hypothesis says that combining two firms will lead to a reduction in the default risk of the combined firms' senior securities with an attendant increase in their aggregate market values. The redistribution hypothesis shows that there is an incentive for shareholders of a levered firm to undertake projects that increase the firm's risk so as to redistribute wealth away from the firm's senior securityholders to themselves. The authors advance the value-sharing hypothesis which predicts that the excess returns to each class of merging firms' senior securities will be positive (or at least non-negative). Their results provide reasonably strong support for the value-sharing hypothesis, some very mild support for the co-insurance hypothesis for acquired firms' convertible senior securities but there is no support for the redistribution hypothesis for either acquired or acquiring firms. An important implication of the study is that failure to consider the effect of merger on the various classes of assetholders could lead to a documented biased estimate of the total value created by merger.

CRITIQUE

1) Like many other studies on the subject, the paper is an event study and is therefore limited in scope to the time around the merger/merger announcement. It would be interesting to know the long-term effect of merger on the various classes of

stockholders. 2) Although the strict criteria used to screen the sample served to increase the likelihood that any valuation effects associated with the merger would be detectable in security prices, it also served to limit the sample. 3) With the generous use of such words/expressions as 'ambiguous', 'there is some hint that..', 'liberal interpretation' and 'conservative interpretation', it is not unlikely that at least some parts of the results lend themselves to more than one interpretation.

Dewenter, K.L., (1995) "DOES THE MARKET REACT DIFFERENTLY TO DOMESTIC AND FOREIGN TAKEOVER ANNOUNCEMENTS? EVIDENCE FROM THE U.S. CHEMICAL AND RETAIL INDUSTRIES" Journal of Financial Economics (37) 421-441

The paper examines shareholder gains from domestic and foreign takeover announcements in the US chemical and retail industries. Contrary to results in several prior papers, the paper finds that within the two industries studied, there is no evidence that foreign mean takeover premia are higher than domestic mean takeover premia. The tests show that within industry takeover premia levels (unconditional or conditional on standard transaction characteristics such as hostile and rival bidders) are insignificantly different. The primary explanation for the different results seems to lie in the aggregation process. Whilst the other papers aggregate transactions across multiple industries, this paper aggregates separately for the two industries. In agreement with Kang (1993) and Harris and Ravenscraft (1991), the paper finds that two US tax changes in the 1980s provide no explanatory power for the difference in domestic and foreign takeover premia levels.

CRITIQUE

1) There could be biases introduced by the fact that the sample is limited to successful bids. 2) The sample has a small number of foreign transactions with the characteristics of interest: the numbers of foreign acquisitions of chemical targets with these characteristics are two hostile, two equity and three rival bidders; for retail targets, the numbers are six hostile, one equity and six rival bidders. 3) Important variables might have been left out, as only variables that are available for all transactions in the sample are included.

Fabozzi, F.J., Ferri, M.G., Fabozzi, T.D. and Tucker J. (1988) "A NOTE ON UNSUCCESSFUL TENDER OFFERS AND STOCKHOLDER RETURNS" Journal of Finance (43) 1275-1283

The note extends the work of Bradley, Desai and Kim (1983) by analyzing returns to target shares of failed tender offers. It focused on two not previously explored areas: the time from announcement to withdrawal and the first year after the event. The data consisted of stock returns of target firms in unsuccessful cash and stock tender offers between 1977 and 1983 that did not get another bid in the year following a failed tender offer. The study reaches two main conclusions. 1) The market reacts quickly to failure as all of the offer-based price increase vanishes when the offer is cancelled. 2) The public withdrawal permanently eliminates the offer's impact (ie, excess returns are zero in the post-failure year). This seems to conflict the view that the target's share value will retain some gain because the market anticipates a later bid (Bradley, Desai and Kim, 1983). An explanation for the conflict can be found in the main

causes of failure in the sampled items in this study which include governmental intervention and effective opposition by the target's management. Hence, the market did not anticipate any subsequent tender offers. Also, the sampled items in this study contained no targets that received another offer after the failure. Bradley, Desai and Kim (1983) did not impose that restriction.

CRITIQUE

- 1) The very stringent sample selection criteria resulted in a very small sample of 21.
- 2) Since the sample was restricted to only targets that received no other bid in the year after the offer's withdrawal, it is difficult to tell whether or not the presence/absence of subsequent offers influence return patterns.
- 3) Even though it has been documented that cash and stock offers result in different return patterns (Carleton, Guilkey and Harris, 1983), the two were put together in this study.

Golbe, D.L. and Schranz, M.S. (1994) "BIDDER INCENTIVES FOR INFORMED TRADING BEFORE HOSTILE TENDER OFFER ANNOUNCEMENTS" Financial Management (23) 57-68

To induce a controlling interest to tender, a bidding firm must offer a price greater than the value of retaining the stock plus the private tendering costs of the pivotal share. Therefore, legal constraints that require disclosure of a bid before a controlling interest is purchased tend to give bidders an incentive to tip arbitrageurs before public announcement. This is an effort to alter the ownership structure of the target in order to secure the pivotal shares in the 'friendly hands' of the arbitrageurs who are also perceived to have low private tendering costs. In the absence of pre-announcement

informed trading, some value-increasing tender offers fail because of (high) private tendering costs. The paper presents a model of a bidding firm's incentive to tip arbitrageurs when there are constraints on the acquisition of shares prior to disclosing information about a bid. The Williams Act amendments to the Securities and Exchange Act of 1934 impose such a constraint. The model suggests that the incentive of bidders to tip arbitrageurs is negatively related to the degree of expropriation (or dilution) allowed by the legal system. This is because if the bidder is able to fully dilute the value of the minority shares, it will not tip arbitrageurs prior to announcement. On the other hand, arbitrageurs will not buy shares in the target if they know the bidder may expropriate the value of shares taken up in the second tier. Second, the incentive to tip is negatively related to the degree to which the back-end price incorporates any pre-announcement price increases arising from additional trading by arbitrageurs because, this increases the cost of the bid. Third, it is negatively related to the degree of institutional ownership and the size of the bidder's toehold: the greater the institutional ownership in the target firm, the higher the likelihood that the pivotal share is already held by a shareholder with low tendering costs; the higher the bidder's toehold, the less incentive it has to tip. Finally, the incentive to tip is positively related to the private tendering costs of the pivotal share. The higher (lower) the cost, the more (less) anxious the bidder is to get it into the hands of someone with low costs.

Hayward, M.L.A. and Hambrick, D.C. (1997) "EXPLAINING THE PREMIUMS PAID FOR LARGE ACQUISITIONS: EVIDENCE OF CEO HUBRIS" Administrative Sciences Quarterly (42) 103-127

According to Roll's (1986) hubris hypothesis, takeovers occur because bidding managers infected with hubris overestimate their ability to manage the target firm and hence overpay for it. Unfortunately, Roll in his paper provided neither a definition of hubris nor a methodology to test it. This study uses 3 observable indicators of CEO hubris or exaggerated self-confidence to examine the role of CEO hubris in explaining the large size of some premiums paid for acquisitions. The indicators were: the acquiring company's recent performance, recent media praise for the CEO, a measure of the CEO's self-importance and a composite factor of the three variables (derived through factor analysis). Their results suggest that CEO hubris plays a substantial role in the acquisition process, particularly in deciding how much to pay. The better the recent performance of the acquiring firm, the more that is paid for an acquisition. This represents the tendency to attribute organizational success to the CEO and for the CEO to deem that success as applicable to managing additional entities. It was also observed that the greater the recent media praise for the CEO, the larger the premium paid for an acquisition (every increment of media praise brought about a 1.6% increase in acquisition premiums. The indication of the CEO's self importance – measured by the ratio of the CEO's pay to that of the second highest paid executive in the firm – was positively associated with premiums. The composite (hubris) factor was highly associated with acquisition premiums and negatively

associated with performance. It was also discovered that the relationship between CEO hubris and premiums is further strengthened when board (of directors) vigilance is lacking – when the board has a high proportion of inside directors and when the CEO is also the board chair. The results also suggest that acquisitions tend to damage acquirers' performance, as reflected by shareholder wealth. The larger the premium paid, the greater the loss (over a one year post-acquisition period). The relationship between hubris and shareholder returns was found to be negative.

CRITIQUE

The paper is probably one of the strongest cases ever presented in support of Roll's hubris hypothesis. There are, however, a few questions that come up for discussion. Are the three indicators (and the composite factor), collectively, a good measure of CEO hubris? Is the one-year period used in measuring post-acquisition performance long enough for the new (merged) firm to reflect the firm's performance under the new management? There is also the question of generalizability since the sample was limited to large acquisitions (with payments over US\$100m) and also limited to the relatively short period of 1989 to 1992.

Healy, P.M., Palepu, K.G. and Ruback, R.S. (1992) "DOES CORPORATE PERFORMANCE IMPROVE AFTER MERGERS" Journal of Financial Economics (31) 135-175

The study examines post-acquisition performance of the 50 largest US mergers between 1979 and 1984. Merger-induced changes in stockholder wealth could be due to actual changes in corporate performance or inefficiencies in the capital market.

Unlike many prior papers, the authors focus on actual corporate performance rather than stock price performance. They integrate accounting and stock return data in their tests. They find that merged firms have significant improvements in operating cash flow returns after the merger, resulting from increased asset productivity relative to their industries. The improvements are particularly strong for transactions involving firms in overlapping businesses. Post-merger cash flow improvements do not come at the expense of long-term performance since sample firms maintain their capital expenditure and Research and Development rates relative to their industries after the merger. There is also a strong positive relation between postmerger increases in operating cash flow and abnormal stock returns at the merger announcements, indicating that expectation of economic improvements explain a significant portion of the equity revaluations of merging firms. They also find very little evidence that transaction characteristics (such as method of financing, whether the merger is hostile or friendly or the relative size of the target) explain cross-sectional variation in postmerger performance.

CRITIQUE

1) The sample, limited to the largest 50 acquisitions during Jan. 1970 to Jun. 1984, is biased towards very large acquisitions/mergers. 2) Despite the many corrective measures taken, one cannot lose sight of the fact that accounting data are imperfect measures of economic performance and that they are affected by managerial decisions.

Jarrell, G.A., Brickley, J.A. and Netter, J.M. (1988) "THE MARKET FOR CORPORATE CONTROL: THE EMPIRICAL EVIDENCE SINCE 1980" Journal of Economic Perspectives (2) 49-68

The authors consider this paper as an update of Jensen and Ruback's (1983) review of the literature on the market for corporate control. The most up-to-date sample used in the studies reviewed in that paper ended in 1981. This paper focuses on more recent empirical studies that cover takeovers made in the 1980s. This paper attributes the high levels of takeover activities in the 1980s to factors like deregulation, innovations in takeover financing, less potent state anti-takeover regulations and retreat by the federal courts and regulatory agencies from protecting besieged target firms. The review confirmed the basic conclusions of Jensen and Ruback (1983) and also shed light on some questions Jensen and Ruback (1983) were forced to leave unanswered. Shareholders of target firms benefit from takeovers. Financial researchers continue to find larger premiums being paid to target shareholders for later tender offers than for earlier ones. Acquirers, however, receive at best modest increases in their stock prices. An important factor in determining how total takeover gains are split is the number of bidders. The pro-target division of takeover gains appear to be partially a result of improved defensive tactics that can effectively delay execution of the bid and allow the target to receive improved bids from others or fashion a defensive restructuring and stock buyback. Evidence further suggests that premiums in takeovers represent real gains and are not simply wealth redistributions. They also found, though not conclusively, that defensive measures that require shareholder voting approval (e.g. fair-price charter amendments and dual-class recapitalizations)

are less likely to be harmful to shareholder interests than those that do not (e.g. poison pills and green-mail type repurchases). However, some proposals that require a favourable vote from shareholders to implement (e.g. supermajority provisions and the elimination of cumulative voting) on average appear to reduce shareholder wealth.

CRITIQUE

1) Like most narrative reviews, the paper is liable to subjectivity. Moreover, it has not been subjected to the rigours of statistical analysis. 2) The studies reviewed are mostly of event-study nature and do not consider the long-term implications of the takeover activities on shareholder wealth.

Jensen, M.C. and Ruback, R.S. (1983) "THE MARKET FOR CORPORATE CONTROL, The Scientific Evidence" Journal of Financial Economics (11) 5-50

This paper, considered a landmark in the research literature on M&A, reviews empirical work presented in over 40 papers on the market for corporate control. The paper makes several important contributions but overall, the authors conclude that "the evidence indicates that corporate takeovers generate positive gains, that target firm shareholders benefit and that bidding firm shareholders do not lose". Hence, in the view of the paper, takeovers create value. The gains do not appear to come from the creation of market power. They also conclude that, with the exception of actions that exclude potential bidders, it was difficult to find managerial actions related to corporate control that harm shareholders. They also argue that the market for corporate control is best viewed as an arena in which managerial teams compete for the rights to manage corporate resources.

CRITIQUE

1) Being a narrative review, it is susceptible to a large measure of subjectivity. For instance, Roll (1986) notes that even though Jensen and Ruback interpret Malatesta's paper as supporting evidence that changes in corporate control increase combined market value, Malatesta himself does not reach so definite a conclusion. 2) In spite of their conclusion, the authors themselves acknowledge in the body of the article that the evidence on the rewards to bidding firms is mixed due, partly at least, to measurement problems. 3) They are unable to tell the source of the takeover gains; in their own words, "knowledge of the source of takeover gains still eludes us".

Kang, J., (1993) "THE INTERNATIONAL MARKET FOR CORPORATE CONTROL Mergers and Acquisitions of U.S. Firms by Japanese Firms" Journal of Financial Economics (43) 195-218

The paper examines a sample of 119 Japanese bidders and 102 US targets during 1975-1988 and a control sample of 119 US bidders and 102 US targets involved in domestic M&A during the same period. Evidence is found that Japanese M&A in the US create statistically significant wealth gains for both Japanese bidders and US targets. Consistent with arguments advanced by Jensen (1986), Fama (1990) and Froot and Stein (1991), bidder specific characteristics and dollar-yen exchange rate movements are useful in explaining the cross-sectional variation in bidder returns: returns to Japanese bidders and returns realised by the portfolio of Japanese bidders and US targets increase with bidders total leverage, their ties to financial institutions through borrowings and the depreciation of the dollar. Tax variables, however, do not

provide a satisfactory explanation for the variation in Japanese bidder returns. For targets, after controlling for the method of payment, industry and other explanatory variables, US targets that sell a majority interest to Japanese bidders earn significantly higher abnormal returns than those selling to US bidders.

CRITIQUE

1) Japanese bidder announcement dates are identified in the Wall Street Journal. It is not unlikely that such information would already be available in Japan, and this could affect returns to the bidder, at least. 2) The paper notes that although it emphasizes some of the variables that may explain Japanese bidder performance, it does not investigate other potentially relevant factors such as the acquisition conveying the bidder's ability to circumvent present or anticipated US trade restrictions, the size of the US market and its political stability, etc. 3) For the sampled items that appropriate matching could not be obtained, alternatives had to be used.

Kaplan, S.N. and Weisbach, M.S. (1992) "THE SUCCESS OF ACQUISITIONS: EVIDENCE FROM DIVESTITURES" The Journal of Finance (47) 107-137

The paper studies a sample of large acquisitions completed between 1971 and 1982 and measures post-acquisition divestiture (by 1989) and evaluates the extent to which the divestitures represent unsuccessful or failed businesses. They discover that: 1) 44% of the acquisitions had been divested by the end of 1989 (even though the results suggest that many divested acquisitions do not represent failures). 2) Acquirer returns and total (acquirer and target) returns at the acquisition announcement are significantly lower for unsuccessful divestitures than for successful divestitures and

acquisitions not divested. If the stock market can differentiate between unsuccessful and successful acquisitions when they are announced, why not managers? The results therefore appear consistent with managerial and hubris related motives. 3) Diversifying acquisitions are almost four times more likely to be divested than related acquisitions. 4) On average, acquirer shareholders suffer a small loss, target shareholders earn a positive return, while acquirer and target shareholders combined earn a positive return when acquisitions are announced.

CRITIQUE

1) Possible biases resulting from the sample selection: the sample was restricted to large transactions (over \$100m in 1982 US\$); acquisitions by foreign acquirers are eliminated because of the difficulty in obtaining post acquisition data. 2) To the extent that some acquirers still owned targets (by the end of 1989) that they would subsequently divest, their results underestimate the extent of divestiture (they however find that percentage of acquisitions divested varied only slightly with age). 3) The categorization of divestitures into successful and unsuccessful acquisitions were made using accounting data on the gain or loss or sale from the divestiture, the business press article describing the divestiture and the divestiture sale price. 4) The authors also note that because their sample is limited to one time period, their evidence of takeover gains is also consistent with the alternative explanation that sellers of assets received fortuitously high prices for those assets in the 1980s.

Loughran, T., and Vijh, A.M. (1997) "DO LONG TERM SHAREHOLDERS BENEFIT FROM CORPORATE ACQUISITIONS?" Journal of Finance (52) 1765-1790

The paper re-examines post-acquisition returns by using a sample of 497 firms delisted from the NYSE, AMEX and Nasdaq during 1970-1989. This study differs from prior studies in two important respects. 1) It reports overall gains by combining the pre-acquisition and post-acquisition returns. 2) Abnormal returns are measured by the difference between 5-year holding period returns of sample stocks and matching stocks (chosen to control for size and book-to-market effects). On average, acquirer stock returns are greater than matching stock returns in cases where a tender offer is made and where cash is used for payment. The acquirer stock returns are smaller than matching stock returns in cases where a merger offer is made and where stock is used for payment. The difference ranged from -25% for stock mergers to 61.7% for cash tender offers. The finding is consistent with 2 hypothesis. 1) Post acquisition wealth gains are greater for tender offers which are usually hostile to incumbent managers as compared to mergers. 2) The acquirer's managers are likely to choose stock payment when their stock is overvalued and cash payment when it is undervalued (Myers and Majluf, 1984). They also cast doubt on the widely accepted view that target stockholders gain from all types of acquisitions. Target shareholders who sell soon after the acquisition effective date gain from all acquisitions, those who hold on to the acquirer's stocks received as payment find their gains diminish over time; in fact, target shareholders in the top quartile of target-to-acquirer firm size ratio find their gains reverse and become negative. The wealth gains following the announcement of an acquisition do not disappear only in cases where the current bid fails and no

subsequent bid materializes (Bradley, Desai and Kim, 1983 and Asquith, 1983) but also in cases where the bid succeeds and the target is large relative to the bidder.

CRITIQUE

1) It raises the important issue of the market possibly not reacting efficiently to the likely wealth gains on the acquisition announcement/effective date, an assumption that has been the basis of event study methodology. 2) It takes a long-term view of shareholder gains. 3) The researchers acknowledge that their tests are joint tests of market efficiency and wealth gains from mergers and tenders, in which case making a definite conclusion on cause and effect is a difficult task. 4) Tax, an important factor to many investors, is ignored in some of the analysis. 5) Were the matching firms used as benchmarks in calculating the returns actually comparable to the acquiring/merging firms? The answer to that question has a big impact on the validity of the results.

Martin, K.J. and McConnell, J.J. (1991) "CORPORATE PERFORMANCE, CORPORATE TAKEOVERS AND MANAGEMENT TURNOVER " The Journal of Finance (46) 671-687

Using a sample of 253 successful tender offer-takeovers occurring from 1958 to 1984, the paper investigates the disciplinary role of corporate takeovers. A takeover is classified as disciplinary if there is a turnover of the top manager of the target firm shortly after the takeover. All others are classified as non-disciplinary. The paper finds that the turnover rate for the top executive of target firms increases dramatically following successful tender offer-takeovers. The paper also finds that there is a strong

relation between top executive turnover and pre-takeover performance of target firms. On average, all tender-takeover targets come from industries that are performing well relative to the market. The targets of non-disciplinary takeovers are performing about as well as the average firm in their industry and are thus performing well relative to the market. The targets of disciplinary takeovers are performing poorly within their industry but not significantly worse than the market. The results are interpreted as an indication that the corporate takeover market plays an important role in disciplining top corporate managers. When the takeovers are classified into hostile and friendly, it is found that there is no difference in the rate of turnover between the two (2) sub-samples. There is also no difference between the pre-takeover performance of hostile or friendly takeovers on the basis of either cumulative market model prediction errors or cumulative industry-adjusted errors. Finally, the study finds that, on average, tender offer takeovers create value for the shareholders of both bidders and targets irrespective of the motive (i.e. disciplinary or synergy) and that there is no significant difference between the gains to the two groups.

Nayar, N. and Switzer, J.A. (1996) "FIRM CHARACTERISTICS, STOCK PRICE REACTIONS AND THE USE OF DEBT IN CORPORATE ACQUISITIONS"
Administrative Sciences Association of Canada (ASAC) 1996 Conference, Montreal, Quebec 190-198

The medium of payment used in corporate acquisitions has been the subject of many studies. Most of the empirical researches have, however, concentrated on only cash and stock. This paper considers the use of debt. The analysis is based on US data of

firms involved in successful mergers or tender offers from 1969 through 1989. The results show that the use of debt to pay part or all of the costs of an acquisition results in an insignificant stock price reaction for bidder firms. The stock price reaction for acquirer firms that used only stock or a mixture of only stock and cash was significantly negative. The reaction for offers involving debt in some amount is statistically significantly higher than that for acquirers that used 'all stock' or 'cash and stock' offers. The results thus seem consistent with the predictions of Myers and Majluf (1984) that the use of debt serves to mitigate adverse selection effects associated with a pure stock offer. They also document that the riskier the debt used in the acquisition, the less positive the effects for current shareholders of the bidder firm and this is also consistent with Myers and Majluf's (1984) 'Pecking Order' of financing. Also consistent with a signaling explanation are the positive effects of tax shields on stock price reaction. The issuance of debt signals to the market that the firm anticipates being able to exploit the tax shield from interest payments. The tax shield, and hence the signal, is more valuable the higher the tax rate of the firm. That prediction is directly supported by the results. They find that the higher the tax rate of the acquirer offering the debt securities, the more positive the stock price reaction. Their analysis also leads them to conclude that managers can use stock in addition to debt to counterbalance any bankruptcy cost effects of the debt. The market does not view the stock offer, in conjunction with debt issuance, as exploitation of inside information of overvalued stock but instead, as optimal capital structure adjustment.

Roll, R. (1986) "THE HUBRIS HYPOTHESIS OF CORPORATE TAKEOVERS"
Journal of Business (59) 197-216

Quoting Jensen and Ruback (1983) as saying "Finally, knowledge of the source of takeover gains still eludes us", Roll says this should not be surprising because there are really no aggregate gains associated with takeovers, or if they exist, they are really small. He then advances the hubris hypothesis to explain why corporate takeovers still go on.³⁸ According to the hubris hypothesis, decision-makers in acquiring firms pay too much for their targets, on average. The central prediction of the hypothesis is that the total combined takeover gain to target and bidding firm shareholders is non-positive. The reported gains of target firms are simply a transfer from bidding firms. The hypothesis predicts that around a takeover, (a) the combined value of target and bidder firms should fall slightly (b) the value of the bidding firm should decrease and (c) the value of the target firm should increase. Available empirical evidence support (a) and (c). Measured changes in the prices of bidding firms have, however, been mixed across studies – while some report significant negative returns, others report the opposite. The paper attributes this to measurement problems such as contaminated information. The hypothesis does not rely on the premise that managers act consciously against shareholder interests. It is sufficient that managers act, de facto, against shareholder interests by issuing bids funded on mistaken estimates of target firm value.

³⁸ 'Hubris' is defined as "great and unreasonable pride, often bringing great misfortune to the person who shows it" (Longman Dictionary of Contemporary English, New Edition (1987) Longman Group UK Ltd.)

CRITIQUE

1) The hypothesis gets support from an earlier paper (Firth, 1980) which concludes that "...the stock market expects zero benefits from a takeover; that the gains to the acquired firm represent an 'overpayment' and that the acquiring company's shareholders suffer corresponding losses". 2) The hypothesis asserts that all markets are strong form efficient: financial markets are assumed to reflect all information about individual firms; on the products and labour markets, a) no industrial reorganisation can bring gains in aggregate output at the same cost or reduction in aggregate costs with the same output and b) management talent is employed in its best alternative use. Do these hold in the real world? The answer to this question is probably what led Roll himself to describe the hypothesis as 'extreme'. Thus, he suggests that the hubris hypothesis should serve as a null hypothesis against which other hypothesis of corporate control should be compared.

Sicherman, N.W., and Pettway, R.H. (1987) "ACQUISITION OF DIVESTED ASSETS AND SHAREHOLDERS' WEALTH" Journal of Finance (42) 1261-1273

Studies of mergers have found that, on average, shareholders of acquiring firms do not gain. In spite of that, economic rents may be earned from the acquisition of divested assets since the divestiture market may not be perfectly competitive. The study analyses buying-firm wealth effects resulting from the purchases of divested assets. Specifically, the paper determines the influence of a) the relatedness of product lines between the divesting assets and the assets of the buying firm and b) the financial condition of the seller upon the abnormal returns of shareholders of the

acquiring firm. The study finds that abnormal returns to stockholders of 147 firms that acquired divested assets were positive but insignificant around the announcement and over the 61-day test period (-30 to +30). The acquisition of related divested assets enhances shareholder wealth of acquiring firms. Acquisition of unrelated divested assets affects shareholder wealth negatively. The cumulative abnormal returns resulting from related acquisitions are significantly greater than the cumulative abnormal returns resulting from unrelated acquisitions and these gains are not associated with changes in either systematic or unsystematic risk. The impact of financial strength of the seller is ambiguous: the purchase of divested assets from financially weak sellers generally does not yield significant gains but the purchase of related assets from financially strong sellers results in significant positive gains. It was also found that firms that purchase related divested units have larger proportions of insider ownership.

CRITIQUE

1) Since the 2 factors (financial condition and product line relatedness) were pre-specified, it is not unlikely that there are other important moderating factors that were not identified by the study. 2) The product-relatedness was measured by a two-digit SIC code, giving a broader definition than many comparable studies.

Song, M.H. and Walkling R.A. (1993) "THE IMPACT OF MANAGERIAL OWNERSHIP ON ACQUISITION ATTEMPTS AND TARGET SHAREHOLDER WEALTH" Journal of Financial and Quantitative Analysis (28) 439-457

The paper examines the relation between managerial ownership and the probability of being a target firm and the impact of managerial ownership on target shareholder returns. Using a sample of 153 targets and 2 samples of 153 non-target firms, they also analyze the relation between managerial ownership and the characteristics and outcome of acquisition attempts. They find that targets have lower levels of managerial ownership than either industry counterparts or randomly selected non-targets. The results hold for both parametric and nonparametric tests. They also find that managerial ownership is significantly lower in contested compared to uncontested offers, and in unsuccessful compared to successful cases. Managerial ownership is significantly related to abnormal returns in contested cases that are ultimately successful. The results are consistent with a positive impact of managerial ownership where it is used to negotiate, but not ultimately block, an acquisition.

CRITIQUE

1) Characterization of acquisitions as contested/uncontested (and also successful/unsuccessful) is done based on Wall Street Journal and Wall Street Journal Index reports. But it is possible for management to use more subtle ways such as refusing to tender its shares hence forcing bidders to offer more. 2) The industry-matched non-targets used for comparison were, on average, significantly larger (US\$ 1583m) than the targets (US\$727). This, though, is attributed to large extreme values in the industry-matched non-targets.

Sridharan, U.V. and Reinganum, M.R. (1995) "DETERMINANTS OF THE CHOICE OF THE HOSTILE TAKEOVER MECHANISM: AN EMPIRICAL ANALYSIS OF TENDER OFFERS AND PROXY CONTESTS" Financial Management (24) 57-67

The paper examines the empirical determinants of two alternative forms of hostile control contests: proxy contests and tender offers. Analysis of previous research suggests that the target's financial performance and ownership profile influence the choice of takeover mechanism. A proxy fight is more likely to ensue in cases where the target firm performance is low, as measured by return on assets and stock market returns. While inefficient management is often mentioned as a reason for a takeover, their findings suggest that the nature of the inefficiency influences the takeover mechanism. If publicly available accounting and market return information indicate poor performance, the target firm's shareholders are more easily persuaded to vote with the rival in a proxy fight because managerial inefficiency is obvious. However, if the alleged inefficiency is due to overlooked new and profitable investment opportunities, a tender offer may be more likely. In other words 'sins of commission' are punishable by proxy fight, whereas 'sins of omission' are punishable by tender offer. The ownership profile of a target also influences the choice of takeover mechanism. Firms that tend to be management controlled are more likely to experience a proxy contest than a tender offer. The reason may relate to the observation that as the voting rights of management increase, the probability of a successful tender offer declines. The reason may also relate to the claim that management controlled firms tend to misrepresent information in annual reports. In

this case, potential rivals tend to avoid the tender offer mechanism, because target shareholders may be compensated before the new owners receive a complete unbiased appraisal of the firm. Agency cost perquisites may also influence the choice of takeover mechanism. In a management-controlled firm, a tender offer potentially would compensate managers for the value of their shares as well as for the value of the perquisites. Hence, tender offers may be more expensive in management-controlled firms than they would otherwise be. Tender offer targets tend to be less leveraged than targets of proxy contests. The authors note that they don't claim to have considered all the relevant determinants in the choice of the type of hostile takeover mechanism.

CRITIQUE

1. The definition of tender offers and proxy fights are not uniform. Whilst a tender offer is for control (i.e. control oriented), a proxy contest is broadly defined as one in which the rival seeks election of board members. 2. Takeover attempts are classified as hostile or friendly based on target firm management's initial reaction but that could be misleading!

Stulz, R.M., Walking, R.A. and Song, M.H. (1990) "THE DISTRIBUTION OF TARGET OWNERSHIP AND THE DIVISION OF GAINS IN SUCCESSFUL TAKEOVERS" Journal of Finance (45) 817-833

Early research on the market for corporate control assumed shareholders to be atomistic, having no incentive to consider the impact of their tendering decision on the probability of tender offer success. Recent researchers have emphasized the

incentive of large stockholders to act strategically. This paper investigates how the distribution of target ownership (specifically managerial, bidder and institutional ownership) is related to the division of takeover gains between the target and the bidder for a sample of successful tender offers. They document that the target's share of the total takeover gains depends on its (target's) distribution of ownership. In the whole sample, the target's gain is negatively related to bidder and institutional ownership (large bidder holdings of target shares mean fewer shares must be tendered for the bidder to succeed; institutional investors with low marginal capital gains tax rates are more likely to tender for a given premium). In the sample of multiple bidder contests, the target's gain increases with managerial ownership and falls with institutional ownership. Bidder ownership seems less important in multiple bidder contests. In general, multiple bidder contests take place when the bidder has a weak ownership position in the target and target management has a strong ownership position. The results also suggest that target management with a large stake is better able to transform a single-bidder contest into a multiple-bidder contest.

CRITIQUE

1) They define 'first announcement' as any acquisition-related news concerning the target preceding the tender offer such that there is no other acquisition-related news for the three previous months. This is too broad and is more likely to include anticipatory price increases than other similar studies such as Bradley, Desai and Kim (1988). 2) There could be biases introduced by virtue of the fact that the sample is limited to only successful takeovers.

Thomas, H. (1996) "INCREMENTAL INCREASES IN BLOCK SHAREHOLDING AND CORPORATE PERFORMANCE?" Administrative Sciences Association of Canada (ASAC) 1996 Conference, Montreal, Quebec 151-160

The study examines 181 matched company pairs to measure the long-term effects of incremental ownership change on corporate performance. Using seven years of data per company and two windows of three years on either side of the event year when a non-control-changing increase in common share holding by blockholders occurs, the study analyses average stock market total returns and operating performance of target companies relative to industry- and size –matched companies. The analysis show that increase in holdings by blockholders is followed by improvement in adjusted stock market returns relative to the pre-acquisition period. The author posits that there are two reasons why one might expect long-term performance to improve following an increase in blockholding: a) where the change in blockholding causes an improvement in performance and b) where an anticipated improvement in performance causes a change in blockholding. However, this effect tends to be market driven and may have more to do with stock market appreciation and mean reversion in widely held and institutionally held shares than with improved management. The conditions under which non-controlling blockholders do play a role in monitoring and improving firm operating performance are found to exist: a) in Employee Stock Ownership Programs (ESOP) transactions and b) where concentration of control is increased, not simply passed from one blockholder to another. Moreover, the effect is stronger for companies whose shareholdings is dominated by institutional investors.

He interprets these findings to be further evidence of the importance of reducing agency conflicts in the firm. It is significant to note that the results are similar to those of Choi (1991) in which toehold acquisitions are positively received by the market in anticipation of subsequent control transfers.

Travlos, N.G. (1987) "CORPORATE TAKEOVER BIDS, METHODS OF PAYMENT AND BIDDING FIRMS' STOCK RETURNS" Journal of Finance (42) 943-963

This study explores the impact of the method of payment (common stock exchanges and cash offers) on common stock returns of bidding firms at the announcement of takeover bids. They find that bidding firms suffer significant losses in pure stock exchange acquisitions but they experience 'normal' returns in cash offers. The differences in the abnormal returns of the 2 groups are statistically significant and independent of the type of takeover studied (i.e. merger or tender offer). Results based on unsuccessful bids indicate that stock offers are associated with negative abnormal returns regardless of the outcome of the bid. The findings are consistent with corporate finance theory which suggests different methods of financing have different signaling implications (Myers and Majluf, 1984). Common stock financing is expected to have a negative effect on common stock returns whilst cash financing is expected to have non-negative effect. The findings from non-convertible bonds provide evidence that bondholders do not gain at the announcement of takeover bids. The lack of a statistically significant positive abnormal stock returns is consistent with the view that a competitive market for corporate control forces the bidding firm to pay the target firm's stockholders a fair price for the benefits they obtain from the

acquisition. Given that tender offers are usually cash offers and mergers are usually common stock exchange offers, the differences in the findings of earlier studies may be due to the failure to control for the method of payment.

CRITIQUE

1) It would be interesting to know if and how the method of payment impacts on the wealth of target stockholders, something that was left out of the study. 2) To avoid contamination of information, firms that experienced concurrent major corporate events were left out. This was, however, limited to the 15-day period prior to the announcement date. This assumes an efficient market that fully incorporates information immediately around the time of event.

APPENDIX B: Annotated Bibliography of Studies Based on Canadian Data³⁹

Burnie, D.A., Gunay, E. and Barnes, T.H. (1995) "ACQUISITIONS – GLOBAL OR DOMESTIC: HOW HAVE CANADIAN COMPANIES FARED?" Administrative Sciences Association of Canada (ASAC) 1995 Conference, Windsor, Ontario 152-160

The paper addresses three questions: whether 1) equityholders of acquiring Canadian corporations have benefited at the time of announcement; 2) corporations that have engaged in global acquisitions have fared better than those that engaged in domestic acquisitions; 3) the US-Canada Free Trade Agreement had a differential impact on the relative performance of international acquirers. With a final sample of 248 international and 455 domestic acquiring firms taken from the period 1985-1992, the study documents that while positive abnormal returns have been reported for both groups on average, the international acquisitions have enjoyed added market performance on a year-by-year basis. The positive returns on announcement of a domestic acquisition are not common in most prior studies, particularly for US acquirers. The major change in the composition of the Canadian economy, moving to economies of scale, reduction of excess facilities and domestic internalisation may be the reasons behind these positive returns. The post-Free Trade years show greater differences for the international acquisition over the domestic ones. The market likely interpreted the agreement as a signal that the government may be loosening the ropes that bind a company to business mostly in Canada.

³⁹ Please note that the critiques in this section are not to be interpreted as comprehensive critiques but

Calvet, A.L. and Lefoll, J. (1985) "THE MARKET FOR CORPORATE ACQUISITIONS IN CANADA PART I" Administrative Sciences Association of Canada (ASAC) 1985 Conference, University of Montreal 192-205

The paper investigates the wealth effects associated with acquisition activity in Canada over the period 1971-1980 and the medium of exchange in acquisitions, differentiating between cash and non-cash takeovers. It is found that acquiring firms are above average performers. Their results do not deteriorate either at the announcement date or thereafter (in fact, there is a statistically significant upward shift in the event month). Target firms, on the other hand, had a deteriorating performance in the months prior to the acquisition. On average target firms experience high abnormal returns at the event time. The returns of targets which remain listed on the stock market deteriorate substantially thereafter. All target firm gains tend to vanish in the 12 months following the event month, with several statistically significant monthly losses. The authors conclude that target firm behaviour is consistent with the inefficient management hypothesis in the pre-announcement period. Bidder firm behaviour is consistent with value-maximisation and contrary to managerial risk reduction hypothesis (bidding firms tend to merge with firms whose returns are more strongly correlated with theirs). The examination of cash vs. non-cash takeovers revealed that cash bidders and targets exhibit a much stronger performance than non-cash bidders and targets. There is indication that the means of payment reflects the possibility of inside information in the hands of bidders' management. Finally, the paper infers that

merely as a demonstration of the fact the every study has its limitations

since the wealth effects as measured by the market model and the two-parameter model (a version of the CAPM, in this case), yield very similar results, the sensitivity of results in the computation of abnormal returns to the benchmark used may not be as pronounced as some researchers portray.

Calvet, A.L. and Lefoll, J. (1985) "THE MARKET FOR CORPORATE ACQUISITIONS IN CANADA PART II" Administrative Sciences Association of Canada (ASAC) 1985 Conference, University of Montreal 206-212

This paper analyses the market for corporate acquisitions in Canada based on the following classifications. 1) Mergers vs. tender offers. 2) Sectoral division of merger gains. 3) Type of acquisition (i.e. vertical, horizontal or conglomerate. 4) Whether the event was prior to or subsequent to the setting up of the Foreign Investment Review Agency (in April 1974) in charge of screening foreign initiated takeovers. The results reveal that targets receive statistically significant higher premiums in tender offers than in mergers. For bidder firms, the abnormal returns are substantially higher in tender offers than in mergers. The differentiation according to different types of acquisitions reveals that vertical acquisitions have strongly negative performance for both bidders and targets, horizontal acquisitions have positive but statistically insignificant abnormal returns for bidders whilst targets make significant gains around the event time only to recede thereafter. For conglomerates, bidders show strong performance across the entire period while targets also do same at and after the announcement date. The authors are quick to add that this does not necessarily imply the firm's diversification is rewarded on the financial markets. The sectoral analysis

indicates that gains are mainly associated with the mining and oil sectors, even though acquiring firms perform well in the manufacturing and regulated sectors. The financial markets react in similar ways to the takeover announcement whichever sector is considered, with a slight tendency to undervalue the positive gains or losses for the bidders and to overvalue the gains for the targets. Finally, the setting up of the agency to control foreign initiated takeovers, on the limited evidence available, seems to have benefited Canadian acquiring firms.

Eckbo, B.E. (1986) "MERGERS AND THE MARKET FOR CORPORATE CONTROL: THE CANADIAN EVIDENCE" Canadian Journal of Economics 236-260

The proposition that a competitive market for corporate control effectively limits managerial divergence from shareholder wealth maximization implies that corporate takeovers are beneficial to shareholders of both merging firms. This proposition is tested in this paper using Canadian mergers and acquisitions. The author posits that several unique characteristics of the Canadian takeover market offer the opportunity to provide new insight into the performance of bidder firms in general. First, Canadian bidder and target firms are frequently of approximately the same size and this mitigates one of the problems of measuring abnormal returns to bidders. Second, whilst the US has a long history of strict enforcement of antitrust laws regulating merger activity, the Canadian Combines Investigation Act of 1910 has proved a relatively weak tool. Third, there is an absence of a uniform set of federal rules regulating takeover activity in all the country's individual provinces. The study, based on about 1930 cases that took place from 1964 through 1983, gave the following

results. Target and bidder firms (listed on the Toronto Stock Exchange) on average earn large and significant gains from takeover activity. This contrasts with the bulk of the evidence reported in US studies which typically fail to document significant economic rents to bidder firms. The merger gains do not differ significantly across horizontal and non-horizontal mergers, where the definition of horizontal is based on over-lapping four-digit SIC codes. Bidder firms located in the Western provinces outperform bidder firms located in Ontario. The geographical location of the bidder, however, does not seem to be a determinant of the gains to the target.

Jog, V. and Riding, A.L. (1988) "POST-ACQUISITION PERFORMANCE OF PARTIALLY ACQUIRED CANADIAN FIRMS" Khemani, R.S., Shapiro, D.M. and Stanbury, W.T. (ed) *Mergers, Corporate Concentration and Power in Canada* Institute for Research on Public Policy, Halifax 233-252

The paper explores the economic benefits arising from a change in corporate control. The analysis was based on measurements of financial and stock market performance of Canadian firms which underwent 'partial' acquisition (the firms maintained their corporate existence and continued to trade publicly post acquisition) by an identifiable individual, group or other firm during the period 1972-1981. The study differed from (then) existing ones in three main ways. a) It was concerned with long-term value and performance implications attributable to changes in corporate control (as opposed to short-term). b) It concentrated on only partial acquisitions (as opposed to fully merged firms). c) By concentrating on only partial acquisitions, one is better able to conduct a direct test of whether or not changes in corporate control lead to

long-term changes in valuation and performance. They report a substantial improvement in performance from pre- to the post –merger period but are unable to establish statistical significance due to the variance of the returns. Their empirical findings lead them to three main conclusions. 1) There is evidence that the stock market performance of the shares of partially acquired firms is, at least, as good as the pre-acquisition period. 2) Accounting measures of performance provide consistent results to the effect that returns on equity measures appear to increase following partial acquisition, and that there is a greater reliance on external debt in the post-acquisition period. No statistically significant differences are found in asset turnover and net operating margin. 3) Any improvements in stock market performance must be viewed in the context of a possible increase in the firm's leverage. The authors are, however, unable to determine whether the improvement resulting from partial acquisition is attributable to the ability of the new owners to influence and change the firm's management.

Masse, I., Hanrahan, R. and Kushner, J. (1988) "RETURNS TO INSIDER TRADING: THE CANADIAN EVIDENCE" Canadian Journal of Administrative Sciences (5) (No. 3) 62-71

The study examines firms which were targets of mergers and acquisitions to determine whether they experienced any abnormal stock price and trading volume movements. The sample of 59 firms was identified from the Canadian Business Index from January 1984 to March 1986. Daily returns were used for the analysis. However, for purposes of comparison with an earlier paper (Eckbo, 1986), results based on

monthly return data are also presented. The results based on both the daily and monthly returns (consistent with Eckbo, 1986) indicate significant increases in the stock price and trading volumes of the target firms prior to the date of the initial public announcement of the merger or acquisition. The shares that trade more heavily tend to show more pronounced price fluctuations. The authors attributed their findings to the advantageous use of inside information (even though no direct link was made to actual inside traders). In a follow up study, Yzerman (1992) suggested that the level of abnormal returns attributed to the use of inside information may have been over-estimated due to the failure to account for the influence of market anomalies (particularly size and turn-of-the-year effects).

St-Pierre, J. (1994) "TAKEOVER BID RESISTANCE AND THE MANAGERIAL WELFARE HYPOTHESIS: EVIDENCE FROM THE CANADIAN MARKET"
Canadian Journal of Administrative Sciences (11) (No. 1) 86-96

In an earlier study using the US takeover market, Walkling and Long (1984) found evidence in favour of the managerial welfare hypothesis (opposition to a bid offer was directly related to changes in the personal wealth of the target firm managers). The model used by Walkling and Long explained the managerial bid resistance by the bid premium, changes in managers' wealth due to the offer, the nationality of the bidder, the possibility of antitrust problems and the percentage of shares controlled by the bidder prior to the offer. This paper extends the model to include competing bids, performance of the target prior to the announcement and the presence of negotiations prior to the announcement. An important additional variable specific to the Canadian

economy was introduced: the presence of a major shareholder who owns a control block. The extended model is used on a sample of 79 Canadian firms attracting 101 cash tender offers filed with the Quebec Securities Commission during the period 1978-1987. The results reveal some significant differences between the US (Walkling and Long) and the Canadian samples. Canadian directors own smaller proportion (though not negligible) of the equity they manage than their American counterparts. Bid premiums in contested and uncontested offers are statistically different in Canada but not in the US. Although there are some differences between the results of the Walkling and Long study and the present one, the latter finds evidence in support of the main finding of the former study. This study finds that the most influential variables to the resistance of managers are competing bids, prior negotiations of their working conditions and Tobin's q proxy ratio. This suggests that the interests protected by managers' reaction are basically their own.

APPENDIX C: Analysis of Studies and Number of Observations Per Study by Event Period

Study	Bidders				Targets			
	Daily			Month	Daily			Month
	-1 0	-5 5	-10 10		-1 0	-5 5	-10 10	
US-Published Studies								
Amihud, Lev & Travlos (1990)	12							
Asquith & Kim (1982)	1	1	1	1	1	1	1	1
Asquith (1983)	2	2	2		2	2	2	
Asquith, Bruner & Mullins (1983)	1	1			1	1		
Bae & Park (Failing Firms)	9	5	9					
Baradwaj, Fraser & Furtado (1990)	3	3			3	3		
Blackburn, Dark & Hanson (1997)		6						
Bradley, Desai & Kim (1983)	3	3	3					3
Bradley, Desai & Kim (1988)	3	3	3		3	3	3	
Brown & Ryngaert (1991)	6							
Cakici, Hessel & Tandon (1996)	1	1	1					
Chang & Suk (1998)	10							
Chatterjee (1986)	2	2			2	2		
Chung & Weston (1982)				1				1
Conn & Connell (1990)				6				2
Cornett & De (1991)	5	1	1		4	1	1	
Dennis & McConnell (1986)	1	1	1		1	1	1	
Dodd & Ruback (1977)				2				2
Dodd (1980)	3	3	3		3	3	3	
Doukas & Travlos (1988)	4	4	1					
Eger (1983)	2	2	2		1	1	1	
Franks & Harris (1989)				2				2
Franks, Harris & Mayer (1988)				24				24
Gupta & Misra (1988)					2			
Gupta & Misra (1989)					2		2	
Hanson (1992)		12				12		
Hayn (1989)	12				12			
Huang & Walking (1987)					11		1	
James & Wier (1987)	22							
Kang (1993)	3	3			6	6		
Keown & Pinkerton (1981)					1		1	
Kummer & Hoffmeister (1978)				1				5
Lewellen, Loderer & Rosenfeld (1985)	1							
Magenheim & Mueller (1988)				6				
Malatesta (1983)				1				1
Mandelker (1974)				2				
Mathur, Chhachhi & Sundaram (1989)	1		1		1		1	1
McCabe & Yook (1997)	24				5			
Peterson & Peterson (1997)	6				6			
Ruback (1983)		1	1					
Ruback (1988)					3			

Study	Bidders				Targets			
	Daily			Month	Daily			Month
	-1 0	-5 5	-10 10		-1 1	-5 5	-10 10	
Sawyer Jnr & Shrieves (1994)	8				8			
Scalon, Trifts & Pettway (1989)	1	1	1					
Smith & Kim (1994)	8	8			8	8		
Sung (1993)	7							
Travlos (1987)	8	8	2					
Varaiya (1986)	5	1	1		1	1	1	
Wansley, Lane & Yang (1983b)					1	1	1	
Wansley, Lane & Yang (1987)	3							
Wier (1983)	1				1			
Zhang (1995)	1	1			1	1		
Sub-total (US-Published)	179	73	33	46	90	47	19	42
US-Unpublished Studies								
Callison (1988)		5				5		
Feils (1993)	26	26			37	37		
Lee (1993)	4	4			9	9		
Liao (1997)	3							
Pray (1992)	5				5			
Thiewes (1989)	8	8	8		2	2	2	
Pilotte (1989)				1				1
Sub-total (US-Unpublished)	46	43	8	1	53	53	2	1
Total (US)	225	116	41	47	143	100	21	43
CANADA								
Amoako Adu & Yagil (1986)				1				1
Burnie, Gunay & Barnes (1995)	2	2	2					
Calvet & Lefoll (1985a)				6				4
Eckbo (1986)				8				5
Eckbo (1992)				2				2
Masse, Hanrahan & Kushner (1988)					5	5	5	1
Masse, Hanrahan & Kushner (1990)	6	6	6		6	6	6	
Total (Canada)	8	8	8	17	11	11	11	13
Grand Total	233	124	49	64	154	111	32	56