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Article abstract

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Investment Bank Market Share and the Performance of Acquiring Companies: Canadian Evidence

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This study examines the relationship between the investment bank market share and the performance of the companies in Canada that sought their advice as an acquirer in a merger transaction. We investigate the validity of two alternative hypotheses proposed by Rau (2000): Superior deal hypothesis and Deal completion hypothesis. The former posits that managers seek top investment advisors because of their ability to recognise the added value in their investments where as the latter have their ability to complete the deal quicker. Tobin's Q is used as a performance measure to find out if the top quality investment banks delivered greater value to their clients compared to low quality banks. We examine the effects of time on deal performance by measuring change in Q at two different points in time – one and two years after the merger respectively. Then we investigate the effect of past performance and past market share on the current market share of a particular investment bank.

1. Introduction

The volume of worldwide mergers and acquisitions (M&As) continued to grow until the recent financial market crisis; thanks to globalization and industry consolidations. Canada had been particularly experiencing a booming M&A market evidenced by a significant growth in transactions related to metals, mineral and oil sectors. According to Amm and Willoughby (2006), during 2005 the dollar value of Canadian deals increased by nearly 85% over 2004 levels, while the growth of about 33% and 38% were recorded in the US and worldwide respectively. They further showed that in 2006, Canadian M&As had reached an aggregated value of US\$93.5 billion, nearly triple the value of deals in 2005. Such a growth translates to demand for the M&A advisors, especially when dealing with very complex transactions. (Servaes and Zenner, 1996; Beitel and Schiereck, 2003; KPMG, 2003). The growing demand for investment counseling has therefore created opportunities for investment banks worldwide. According to Walter et al. (2008), investment banks acted as advisers on deals worth \$386 billion during 2003 in the U.S, with a total amount of advisory fees over \$596 million. It is evident from these figures that investment banks derive a significant amount of income from their advisory services in M&A transactions.

Chahine and Ismail (2007) have also shown that out of the \$2.7 trillion generated during 2005 from M&As worldwide, roughly \$31 billion was spent on financial advisors. This raises the issue as to whether the companies seeking such advice derive the value for such spending on M&A advisory services. Even though the question of whether such massive fees are justifiable may not have been resolved yet, a lot of studies have argued that these advisors continue to play a crucial role in the M&A activity. For example, Servaes and Zenner (1996) argued that advisers can reduce transaction costs particularly in complex deals. Others contended that advisers can improve the quality of the matches between acquirers and targets, accelerate the matching process and provide valuable anonymity in the preliminary stages before merger negotiations begin (see Diamond & Maskin, 1979; Grossman & Hart, 1980). However, after acknowledging the contributions of the investment banks in M&A deals, it is very important that we further investigate if their activity results in creating shareholder value. In theory, any project including M&A transactions should only be undertaken if it adds value to the firm. According to Bowers and Miller (1990) “managers should use the same decision criterion in choosing an investment banker as in all other corporate decisions by evaluating the impact on shareholder wealth” (p.34). When defining the notions of success and failure in the context of M&As, Bruner (2004) argued:

“Enhancing the welfare of shareholders is a fundamental objective of all firms-indeed, in the United States, corporate directors are required to implement policies consistent with shareholder welfare, usually synonymous with creating value” (p.31).

Although there have been some press write-ups concerning the fact that mergers may not result in any value creation, recent studies have shown more positive results. For example, KPMG (2003) study indicated that over a third of the M&A deals in their survey which focused on deals completed between 2000 and 2001 enhanced shareholder value. Specifically, they showed that 52% of deals actually enhanced value when the measure was restricted to the post-acquisition performance. Their findings also showed that only 16% of respondents had their own M&A teams primarily involved in assessing the value of the deal while majority of respondents sought the help of the board of directors and external advisers. This implies that in most M&A transactions, external advisers play a more influential role in assessing deal value.

In their study examining the determinants of M&A success, KPMG (2007) results added some more evidence to the fact that M&As can no longer be viewed as unprofitable. According to their study, companies that employed investment banks’ advisory services in their merger were associated with an average of 3.7% and 10.8% normalized stock gain within 12 and 24 months respectively. Normalized returns being stock price returns relative to that of the other firms in the same industry. It is evident that such acquirers were constantly outperforming their industry peers. However, one could argue that such positive results can be attributed to the due diligence exercised by the advisers or to more professional management practices that put more emphasis on sound M&A strategies to increase the likelihood of success.

Even though these recent studies tend to cast doubts on the added value of the advisory to the acquirer, the question of whether investment banks’ advisory services in such transactions are economically beneficial to the acquiring companies still remain open for discussion. As long as such questions are unanswered, the evaluation of M&A success and its drivers remain a fertile area for further research. To shed some light on these issues, this study examines the relationship between the investment bank market share and the performance of acquiring companies in Canada.

This study is motivated in part by Rau’s (2000) intriguing US-based findings that the bank’s market share is more closely associated with deal completion than wealth creation for the acquirer. These findings are at odds with the one factor that investors seem to be more concerned about - increase in their wealth. Given such results, one can conclude that investment banks’ main focus is on completing the deals in order to enhance their market share rather than generating value or preventing poor deals. Alternatively, it could be that managers simply fail to select the investment banks based on their ability to create value in mergers and acquisitions.

According to Da Silva Rosa et al. (2004), wealth-seeking advisers are often faced with conflicting objectives when advising their clients. For example, on the one hand, they strive to complete as many deals as they can in a given period to boost their market share and income, on the other hand endeavour to create value for their clients. However, the fact that the banks seem to be concentrating more on deal completion rather than the client’s wealth maximization tends to create some conflicts. If indeed the bank’s market share does not reflect its ability to deliver high quality service, then the question arises as to why companies hire the investment banks, especially the top-tier banks (high quality banks) that are often expensive. We find it interesting to test the robustness of Rau’s findings in the Canadian context. It could be argued that perhaps the results are unique to the US M&A market. Even though, Canada and the US economies have always been interconnected by geography, their institutions and laws are different, thus enhancing the likelihood of obtaining different results. In addition to testing the validity of Rau’s findings our study is different from others in that we use Tobin’s q as a performance measure. The rationale for this measure is provided in later sections. These differences together with substantial non parametric testing undertaken in this study that are free of assumptions about statistical distributions contribute significantly to the existing literature.

Subsequent sections are organized as follows: Section 2 provides literature review on relation between investment bank market share and performance of acquiring firm. This section is divided into three parts. The first part concentrates on the market share of an investment bank as proxy for its reputation and the second part focuses more on past performance as a better proxy for reputation and quality. The last part of this section provides research questions and hypotheses development. Section 3 discusses the methodology that we used to analyze the relation between the

investment bank market share and the performance of the acquiring companies. Section 4 presents the empirical results and the interpretation. Lastly, Section 5 provides the conclusions of this study.

2. Literature Review

Currently, there are only a few studies specifically dealing with the relationship between investment bank market share and the performance of acquiring firms. However, their conclusions are inconsistent. Possible reasons for such differences in conclusions could be the use of different methodologies or differences in variables that have been considered by the authors when investigating the performance of M&A advisors. Moreover, the fact that there is no single objective metric that has been agreed by all market participants to judge the performance of advisors, makes the issue even more problematic. In investigating the performance of M&A advisers, prior research has predominately concentrated on the wealth gains that an adviser's client obtains as a measure of the adviser's performance (Chahine & Ismail, 2007). In general, previous literature has focused on two aspects: While earlier studies focused on the reputation of financial advisors using their market share as a metric, the recent research contends that past performance is a more appropriate measure of investment bank reputation in mergers and acquisitions.

2.1 Investment Bank Market Share and Reputation

Bowers and Miller (1990) examined the relation between the stock returns accruing to the acquirer and the choice of investment bank. They documented greater wealth gains for both the acquirers and the targets which hired more prestigious investment banks as advisors than those hiring less prestigious advisers. However, when the acquirer wealth was considered separately, the service of the top tier investment banks did not yield better gains than the lower quality banks. Michel et al. (1991) casts doubt upon Bowers and Miller's conclusions. The results of their study showed that the degree of prestige of an investment bank had no direct relationship with the bank's performance. The evidence was obtained when Drexel Burnham Lambert, a second tier investment bank outperformed all other banks included in the sample. McLaughlin (1992) showed that excess returns around announcement period were significantly lower for acquirers who had hired high quality advisers. His argument was based on the premise that most high quality advisers are hired for difficult transactions which require higher premiums with minimal benefits to the bidder.

Rau (2000) investigated the determinants of the market of the investment banks acting as advisors and how the investment banks' market share affected their client. His study showed that in both mergers and tender offers, there was a strong positive relation between market share of an investment bank in any one year and the percentage of deals it had completed in the past. He further showed evidence that the market share of investment banks were positively related to their ability to complete the deal. However, the study showed no relation between value generated in past advises and the bank's subsequent market share. In support of Rau's findings, Rau and Rodgers (2002) showed that acquirers advised by top tier advisers did not incur higher excess returns around announcement period. Such acquirers even earned lower long run returns than those generated by deals involving less prestigious advisers. Hunter and Jagtiani (2003) also showed that the quality of the bank was more related to the probability of completing a deal as well as the speed at which such deals were completed. As in Rau (2000), they found that deals involving top-tier advisors rather yielded lower returns than other low quality banks.

The findings that high quality advisers do not generate higher returns to their clients might be driven in part by the methodology used to rank the advisers. Rau (2000) and McLaughlin (1992) used a static ranking system to determine adviser quality and a bank's ranking remained fixed over the entire sample period. This ranking procedure had been criticized in most recent studies (see Da Silva Rosa et al., 2004; Walter et al., 2008). They argued that such ranking tends to ignore the dynamics of the M&A adviser market that could be relevant in measuring adviser quality.

Walter et al. (2008) tried to incorporate several variables in their study to overcome the limitations of previous studies. Firstly, they ranked advisers on their contemporaneous market share in a rolling window period of three years allowing adviser quality to vary over time. Secondly, they recognised that the level of complexity of a transaction can potentially influence the returns delivered by M&A advisers. Therefore, they considered various variables that control for the complexity and characteristics of the deals. Thirdly, they partitioned the sample based on purchase consideration – all stock, all cash and hybrid, and analyzed the abnormal returns to determine whether high quality advisers are able to

deliver greater returns to their clients across all categories. However, despite the inclusion and consideration of all these various elements in Walter's study, the results from their abnormal returns model still showed that high quality advisers were unable to generate higher positive abnormal returns to their clients. In terms of the likelihood of deal completion, their results were a bit inconsistent with both Rau (2000) and Hunter and Jagtiani (2003) because they did not observe any evidence showing that high quality advisors were more likely to complete deals. However, with regard to the speed at which deals were completed, they also found that high quality advisors completed the deals faster than low quality advisers.

One interesting observation from their study that is worth investigating further was the result which showed that abnormal returns to acquirers in bids involving stock were more positive when high quality advisers were used. The results were surprising because such results could be expected in case of cash deals rather than stock deals. However, Walter's results seemed to be consistent with Eckbo et al. (1990) who reported no significant abnormal returns for cash deals although deals with mixed considerations and stock alone showed that acquirers earned 5.7% and 2.7% abnormal returns respectively.

While assessing the limitations of the previous studies on this subject, Kale et al. (2003), found that previous studies did not control for the reputation of the target's advisor, thus obtaining negative returns. In their study they controlled for the target's advisor and other confounding factors and found that employing prestigious financial advisors was advantageous.

2.2 Past Performance and Reputation

Although market share had been considered as a proxy for investment bank reputation, recent literature has criticized the use of market share as a measure of the bank's reputation. Bao and Edmans (2006) have strongly argued in favour of past performance as an appropriate measure of investment bank reputation instead of market share. They reported that the top quality banks based on past performance criteria outperformed the lower quality banks by 0.92 percentage points over a two year period. They further showed that such banks seemed to excel in terms of completion speed, completion probabilities as well as in wealth maximization. Their argument was that merger advisory mandates were being given on the basis of past market share league tables and that such mandates results in significant negative returns for the acquirers. They warned the investors against the use of past market share because it had proved to be a negative predictor of future performance. Specifically, they argued as follows:

“A second normative strand of literature has found no criterion upon which clients can choose to improve future value. In particular, bank reputation measured by market share or prestige is not associated with superior performance” (p.1).

They had shown that banks with perfect past completion records over the past two or three years were associated with higher cumulative abnormal returns (CARs) of 0.7%. Their findings provided an unusual view to literature by proving that reputation does improve future M&A performance, if measured on the basis of past performance, rather than market share or prestige. When investigating factors that motivate bidders to engage advisers in M&As in Australia, Da Silva Rosa et al. (2004) also argued that adviser league tables constructed on the basis of market share are unreliable guides to the roles played by advisers. They concluded that advisers generally specialize in certain deals, therefore even lower quality banks can excel high quality banks depending on the deal characteristics.

Chemmanur and Fulghieri (1994) argued that the quality of an investment bank should be determined largely by its past performance because the amount and the quality of the bank's efforts are unobservable. In support of their view, CEO of Chessiecap, Inc,¹ extended the argument showing that many clients have been unhappy over decades as a result of mistakenly choosing the promise of expertise over the evidence of experience.

In contrast to the idea of judging quality based on past performance, Petmezas (2008) argued that more often the market fails to understand that past managerial performance is not necessarily a good indicator of future performance, at least in the case of acquisitions. His view is that, the performances of mergers often do not live up to investor's initial optimism. For example, bull markets can present losing acquisitions for investors who are “infected by hubris” (p.4).

Usually in such instances stock price should reverse in the long run as beliefs are replaced by results. That is, with time investors tend to revise their views about the quality of the merger (losing their optimism), thus resulting in lower returns.

Deviating a little bit from the perspective of reputation, Allen et al. (2004), focused on how financial advisors' prior relation with clients affects wealth gains and deal outcomes. They found that acquirer's abnormal returns were either negative or insignificantly different from zero. Similarly, Chang et al. (2008) examined the impact of prior bank-firm relationships, industry expertise and information leakage concerns on the acquirers' and targets' choice of financial advisers in mergers and acquisitions. They showed that the previous merger advisory relationships, bank's industry expertise and bank market share increases the likelihood of a bank being chosen to advise a particular merger. They also found that if a bank had past relationships with both the acquirer and the target, it was more likely to stay with the acquirer. These findings were consistent with Francis et al. (2006), who showed that the likelihood of retaining an advisor was positively related to abnormal returns around previous acquisition announcements.

The most recent literature continued bringing more interesting issues to the surface when evaluating the determinants of M&A success. Chen and Jian (2009) examined the effects of intangible assets on acquirer M&A returns. They argued that intangible assets of the company are the key determinants of a successful M&A integration that can strongly affect the overall returns, hence the need to incorporate a performance measure that takes the intangible assets into consideration when valuing M&As. They used Tobin's Q in their study to show that sectors with a significantly higher proportion of intangible assets earn considerably higher M&A returns compared to other sectors. This study has really brought some interesting perspectives into the M&A literature that needs to be explored. Their results supported Lee and Tompkins (1999) assertions, that Tobin's Q had been considered as an important and widely accepted measure of corporate performance in today's financial literature. Extending the argument for the use of Tobin's Q, Li et al. (2004) also argued that Q value can be used to measure corporate performance as well as to explain a wide variety of economic phenomenon, including business concentrations and corporate diversification.

Chahine and Ismail (2007) have also contributed some insights to the current literature by showing how the acquirers were more likely to generate a large dollar gain when they pay higher advisory fees. Their study showed that most acquirers are not concerned so much about paying large advisory fees even though this may result in a higher premium. This implies that as long as investment bank's efforts result in large merger synergies that in turn lead to higher acquirer dollar gains, acquiring companies find it rational to pay large advisory fees.

Other studies have tried to examine this topic by assessing the position of the investment bank in M&A transactions. For example, Bodnaruk et al. (2008) found that in mergers in which the adviser to the bidder had a stake in the target, such deals resulted in lower post-merger profitability. The deals experienced a drop in return on equity (ROE) of 1.9% in the year following the deal. This was due to the fact that, target firms in which the advisory bank held a stake tended to be overvalued by more than 10% compared with targets in deals in which the advisor did not hold a stake at all. They concluded that advisory stake was positively related to the likelihood of deal completion but negatively related to the viability of the deal showing that such deals were not wealth – creating. The findings of these study suggested that advisors take advantage of their privileged position not only by acquiring positions in the targets but also by directly affecting the outcome of the deal in order to realize higher capital gains from their positions. Extending this argument, Stouraitis (2003), argued that investment banks that invest their money in the deals have strong incentives to negotiate favourable terms in order to safeguard their investment. His results showed that investment banks that advise acquirers negotiate favourable terms when they invest their own money in the deal, but lead their clients to overpay when they do not have financial incentives.

Song and Wewe (2008) examined whether the expertise and independence of financial advisors affect deal outcomes and shareholders' wealth. To our knowledge, this was the first paper to examine the role of financial advisors from this perspective. After controlling for the endogenous choice of financial advisers by merging firms, they examined how investment banks' expertise and independence affect deal premium, completion speed, success rate and announcement period returns. From the 202 boutique banks used in their sample, they found that on average, boutique advisors achieved a higher deal success rate. However, such boutique advisors were slow in completing deals probably due to insufficient technical resources. Despite the recent popularity for boutique firms, there is still no concrete evidence that merging firms benefit from deals advised by these specialized firms.

Despite all these issues that have been brought to light by recent studies, most companies still face a dilemma when selecting investment banks to provide financial advice on M&A transactions because usually such decisions are made on the basis of perceived quality of the adviser. This dilemma is partly driven by the findings of earlier research in the area of reputation, which showed that investments into brand building by a supplier are an effective measure in conveying the supplier's quality to the market participants (Shapiro, 1983; Dunbar, 2000). Walter et al. (2008) argued that such a measure is subjective and stated that:

“The quality of services provided by an adviser is not an attribute that is directly observable prior to the provision of the service. In economic terms, M&A advisory service can be described as an experience good, where the quality of the supplier's service cannot be observed ex-ante. Due to this, high quality advisers need to be able to demonstrate their superior quality to participants in the market through some other means” (p.343).

After going through all arguments advanced in literature, an important question may be raised. That is, if acquirers' returns are not positive even after employing the top-tier investment banks (McLaughlin, 1992; Michel et al., 1991; Rau, 2000), then why should companies bother about the services of investment banks in M&A transactions? Even the most recent study by Walter, et al. (2008), which attempted to include several variables that control for complexity and characteristics of the deals as well as considering the effect of consideration type, could not yield different results from the above mentioned studies. They found that even though high quality advisers may complete deals faster, their superiority is not reflected in increasing the likelihood of deal completion or delivering greater abnormal equity returns to their clients. Then what could be a possible reason for all these results? We believe more studies in different markets with different methodologies employed when investigating the determinants of the market share of investment banks acting as advisers in mergers and acquisitions needs to be carried out. To our knowledge, this study is the first one to examine the role of financial advisers in M&As in the Canadian context. This study contributes to the existing literature by updating the evidence through the use of the most recent sample of Canadian M&As and by checking the robustness of the results using an up-to-date methodology of measuring the improvement or decrease in post-merger operating performance.

2.3 Research Questions and Hypothesis Development

We build our hypotheses on the superior deal hypothesis and deal completion hypothesis proposed by Rau (2000). We investigate the determinants of investment bank market share by directly examining the explanatory power of these hypotheses. These hypotheses provide logical reasons to answer the following questions:

1. Do high quality banks complete more value enhancing deals than value destroying deals?
2. Do high quality banks complete more deals faster in a given period than other banks?
3. Are the investment banks involved in M& A transactions niche players?

Superior Deal Hypothesis

This hypothesis tries to predict that acquirers advised by top tier investment banks should receive higher valuation on an average than acquirers advised by lower tier investment banks. According to this hypothesis, the performance of the acquirer in M&A deals is an important determinant of the bank's market share. Specifically, it implies that top-tier investment banks will be less likely to complete value – destroying deals for their clients and more likely to complete value-enhancing deals than other lower quality banks. The prediction made here tends to be in line with the fundamental objective that matters to all shareholders-wealth creation. According to Schiereck et al. (2008), the superior deal hypothesis holds when there is a positive relationship between the average economic value of transactions, measured as the combined wealth gain and the reputation of the advisers involved.

Deal Completion Hypothesis

The deal completion hypothesis on the other hand of the deal is of secondary states that the main objective of the investment banks is simply to complete the deal. The hypothesis further argues that as the incentives in M&A deals make the banks to focus on deal completion rather than value creation, no positive relationship between the acquirer's excess value and the investment bank's market share should be anticipated. According to this hypothesis, high quality advisers have more expertise and experience in M&A transactions, therefore are more likely to complete deals faster than low quality advisers.

3. Data and Methodology

3.1 Sample Selection

For the purpose of this study, we decided to analyse the merger deals that were completed during the period of 2000 to 2008. The sample used was obtained from Mergerstat Database consisting of Canadian M&As announced and completed between 2000 and 2008. To maintain a minimum size in terms of value and control a cut off of \$100 million in value and acquisition of at least 50% of the target were set. This gave us a total of 377 observations. However, we filtered the sample using the following additional criteria:

1. The acquirer was a Canadian public company.
2. The announcement date and the completion date were available in the database.
3. The acquirer was a listed company whose financial data was publicly available in either Financial Post or Sedar database².
4. The name of the advisor for at least one of the parties was disclosed.

After incorporating all these conditions only 128 deals were considered as a final sample. This forms the core sample for further analysis. However, when change variables are used the sample size will be reduced. Further, for some of the issues addressed not all the above conditions need to be met. In such instances tests with higher samples have been done where appropriate and such results are presented in Appendix I.

3.2 Ranking Advisers

Previous studies on M&A the advisors have commonly relied on the league tables when ranking advisors (Rau, 2000; Michel et.al., 1991). Therefore, this study followed the same ranking scheme. For example, Rau (2000) grouped advisors into three different tiers according to their relative positions. He actually classified advisors on the basis of the number of times an advisor is ranked in the league table based on the value of transactions advised during each year. He referred to the top five banks every year as 'bulk bracket' or first-tier banks, the next fifteen as major bracket or second tier banks and the remainder as third tier banks. Rau's methodology involved measuring the average market share of every bank as a fraction of the total value of transactions advised by all investment banks in any given year. Basically, each adviser in a deal is given credit for the deal irrespective of its role or contribution efforts. The fact that the ranking based on the league tables have consistently failed to capture the most crucial aspect of quality that matters most to shareholders – increase in their wealth, has made the credibility of these tables to be questionable. However, despite all these limitations, the use of league tables is wide spread. For example, most reputable analysts³ and academic researchers, even outside M&A field have relied on these tables for their various projects and studies.⁴

Similar to Rau (2000), the advisors were grouped into tiers each year using a three-tier classification system. The first top five banks were considered as top tier (high quality advisers), those ranking from 6th to 10th ranked second tier and the remainder were ranked as third tier advisers (low quality advisers). Credit for any transaction was given to the acquirer's bank only. Following Rau (2000) and Walter et al. (2008), in cases where more than one adviser was involved on the same side of the transaction, the tier of the highest ranked advisor in the group was taken as the tier of that group.

As in Rau (2000), the average market share of each investment bank was calculated as a fraction of the total value of transactions advised by investment bank in any single year.

3.3 Hypotheses Testing

We investigated the relationship between the investment bank market share and the performance of the acquiring firm by revisiting the two hypotheses:

H1: Superior Deal Hypothesis

The sample was partitioned by tiers to find out the deals in which the overall outcomes of the deal was wealth creation or wealth destruction. In this study, deals were classified as ‘good’ or ‘bad’ depending on whether the change in Q value was above average or below average in the post-merger period. Thereafter, the proportions of good and bad deals completed by acquirers advised by the three categories of the investment banks were established. The incidence of good and bad performance was then tested for association with the category of advisers.

As suggested by Hickl and Walz (2004), “when measuring the M&A success it is first of all necessary to think about the appropriate period of measurement” (p.7), we observed wealth creation one and two years after the deal completion to investigate effects of time on such deals. Even though, there is no common consensus yet on appropriate period, there have been some helpful surveys conducted to find out from managers as to what they thought would be an appropriate time to be given before success of a merger or acquisition could be properly measured. For example, American Management Association studied 109 US companies in 1989, responding to this particular issue of timing, and they showed that 34.9% were of a view that a significant measurement of success during the first two years after acquisition was possible while 65.1% argued that a valid measurement needed more than two years (see Hickl & Walz, 2004). Obviously, it would be unfair to judge the performance of a merger or acquisition way before 50% of the acquisition program is implemented.

A longer period was preferred because the process of adapting different corporate cultures and the interactive learning process are very time intensive. In this vein, we think of an M&A process as an organisational renewal strategy that calls for an evolution strategy that recognises that the old systems have to be unlearned gradually to give way to new organisational strategy. Further, a very long period of time is not ideal for evaluation of M&A performance because over time other events are likely to have more influence on the company’s performance than the investment bank advice. Hence, we restricted our analysis to one and two years after the merger.

We further examined the expectations of the superior deal hypothesis by investigating whether the market share of any category of investment bank is related to the post-acquisition performance of the acquirers. Specifically, our motive here was to find out if the three categories of banks are specializing in a certain kind of deal-cash, stock or combination deals- and thus have higher propensity to create value. We therefore partitioned the deals into three categories: Cash deals, stock deals and combinations.

As mentioned earlier Tobin’s Q is finding increasing application in most organisational research (Lang & Stulz, 1994; Chen and Jian, 2009). According to Li et al. (2004), Q can be defined as “the ratio of the market value of the outstanding financial claims on the firm on the current replacement cost of the firm’s assets” (p.51). Tobin’s Q ratio has been favoured for its simplicity in interpretation because its unity value provides a clear cut-off on performance. Companies with greater Q value in the post-acquisition period are able to create more value through efficient use of resources while those with a lesser Q value are associated with poor utilization of resources. To be consistent with the superior deal hypothesis, all top tier investment banks were supposed to yield a change in the value of Q that is greater than the change for lower quality banks.

The theoretical Q measure of market value of securities/market value of assets is not easy to measure and researchers have discussed this issue and arrived at usable measures (e.g., Arcelus et al., 2005). We modified the measurement of Tobin’s Q used in Arcelus et al. (2005) to include other non-current liabilities in its measurement. Accordingly for the purpose of this study, Q is given by (1) below.

$$Q = (MVE + PS + DEBT)/TA \quad (1)$$

Where:

MVE = Market value of firms common equity

PS= Preferred stock

DEBT= LTD + DEF+CL

LTD= Long term debt plus other non-current liabilities

DEF=Deferred tax

CL=Current liability

TA=Total assets

H2: Deal Completion Hypothesis

The deal completion hypothesis argues that the banks' role in M&A is simply to complete the deals, in which case the market share of the bank will depend on the number of deals they completed in previous year. We tested for relation between the amount of time taken for deal completion and different categories of banks. The analysis was done controlling for the size and nature of deal and for the number of advisors involved in a given deal Da Silva et al. (2004) argued that multiple advisor deals relatively took longer time because more consultations had to be made hence the need to control for this variable.

4. EMPIRICAL ANALYSIS

4.1 Descriptive Statistics

To address our research questions we need to identify using some criteria the top, middle and bottom tier of investment banks and measure their performance. The issue that arises is whether to define market share by the traditional value measure or by the number of deals which is being alluded to be a key performance measure for the investment banks. We have used both measures and tested whether the rankings under alternate measures are statistically different. The average ranks of the thirty firms under the two alternate criteria are given in Table 1 below.

Table 1: The Top 30 Investment Bank Ranking

Investment Bank	Average Ranking by Valuation of Deals	Average Ranking by Number of Deals	Tier by Valuation
Merrill Lynch Co. Inc.	3.56	4.22	H
RBC Dominion Inc.	4.33	3.44	H
CIBC World Market Inc.	5.56	4.56	H
TD Securities	7.89	6.33	H
BMO Capital Markets	8.00	5.67	H
Scotia Capital Inc.	9.22	6.22	M
Goldman Sachs Co.	9.78	9.44	M
Credit Suisse	10.67	8.89	M
GMP Securities LP	11.00	9.56	M
Citigroup Inc.	11.78	8.56	M
Morgan Stanley	12.11	11.00	M
Genuity Capital Markets	12.33	12.22	M
JPMorgan Chase Co. Inc.	12.56	11.78	M
UBS	12.67	10.33	M
Bear Stearns Co. Inc.	14.22	13.33	M
National Bank Financial Inc.	14.44	13.44	L
FirstEnergy Corp.	15.00	12.00	L
Raymond James & Associates	15.22	12.33	L
Banc of America Securities LLC	15.22	14.56	L
Lazard FrFres et Cie.	15.33	13.44	L
Macquarie Bank Ltd.	15.56	14.11	L
Keefe, Bruyette & Woods Inc.	15.78	15.67	L
Compagnie FinanciFre.	15.89	15.78	L
Orion Inc.	16.00	14.89	L
Financo Inc	16.11	16.22	L
Dundee Securities Corp.	16.22	15.44	L
Rothschild Inc.	16.56	16.22	L
WY Campbell Co.	16.56	16.89	L
Schroder Salomon Smith Barney	16.56	15.89	L
Peter Co. Ltd.	16.67	13.67	L

Kendall's tau is computed on the rank on two measures to test the level of concordance. The result is a tau of 0.761, significant at the 5% level. Therefore, we reject the null hypothesis of mutual independence between the two rankings. Since the figure of tau obtained is more towards +1, it shows that there is a high agreement between the rankings. The ranking can therefore be done using either the total values or number of deals. However, the market share in terms of valuation will be used as in previous literature because it better reflects the reputation of the investment bank. The banks are categorized into three tiers by this ranking, with the high tier consisting of the top 5, the next 10 as second tier and the remainder as third tier.

Quality of the Deal

To examine the quality of each acquisition, a proxy is needed and we have used the Tobin's Q to measure the quality of the acquiring firm. If a deal contributed to the value of the company, then the post acquisition Tobin's Q measure should be higher than the pre acquisition Tobin's Q measure. The differences on both the Q s one year and two year later were calculated. Another measure that appears in literature is the excess market returns after acquisition. This measure was not used because of the market returns, which appears only in the immediate equity performance, where as Tobin's Q measure is more indicative of the asset/liability structure of the company on which the acquisition has a more direct impact.

Variables

To conduct the linear regressions pertaining to the research questions, additional dummy variables are created for various characteristics of the deal. These included: dummy variables for whether the deal was in cash, stock, or mixed; whether the acquisition was by generic acquisition, tender offer, or merger; and the role of the investment bank as an advisor or provider of fairness opinion. The continuous variables are also split into above average and below average categories when needed. The following are variables used in the analysis:

Time	Time from announcement to completion
Size	Base equity price of acquisition in millions of dollars
Q0	Pre-acquisition Q
Q1	1 year after acquisition Q
Q2	2 years after acquisition Q
dQ1	Q1 – Q0
dQ2	Q2 – Q0
Rank	Average ranking by valuation as calculated in previous section
Lagged_MS	1 year lagged market share of the bank in percent value

Method Dummy Variables

Cash	1 if the deal conducted in cash only, 0 otherwise
Stock	1 if the deal conducted in stock only, 0 otherwise
Mixed	1 if the deal conducted with both cash and stock, 0 otherwise

Type Dummy Variables

Merger	1 if the deal was a merger, 0 otherwise
TO	1 if the deal was a tender offer, 0 otherwise
Acq	1 if the deal was neither merger nor tender offer, 0 otherwise

Role Dummy Variables

Adv	1 if the role of the bank was advisor only, 0 otherwise
FO	1 if the role of the bank was fairness opinion only, 0 otherwise
Broker	1 if the role of the bank was broker only, 0 otherwise
Adv_FO	1 if the role of the bank was adviser and fairness opinion, 0 otherwise

Other Dummy Variables

Multiple	1 if there were more than 1 bank involved, 0 otherwise.
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The following table shows the descriptive statistics for the continuous variables.

Table 2: Descriptive Statistics (N = 128)

Variable	N valid	Min	Max	Mean	Std. Deviation
Time (days)	128.000	28.000	467.000	101.961	71.532
Size (\$million)	128.000	105.123	13548.610	1267.113	1977.521
dQ1	128.000	-10.605	2.025	-0.503	1.784
dQ2	92.000	-10.799	3.424	-0.532	2.075
Rank	128.000	3.556	18.333	8.934	4.515
Lagged_MS	106.000	0.000	0.220	0.069	0.073

In this table we addressed the relationships between the quality of banks and the superior performance. Accordingly, we classified the above average and below average change in the Qs of acquirers across the three tiers of

investment banks that advised them and tested for association using chi-square. The table below gives the number of observations in each cell along with the computed value of chi square under the null hypothesis.

Table 3: Chi Squared Test for Tier and dQ1

	dQ1_H	dQ1_L	Total
Tier_H	20	48	68
Tier_M	7	15	22
Tier_L	15	23	38
Total	42	86	128

($\chi^2 = 1.131, p = 0.568$)

Table 4: Chi Squared Test for Tier and dQ2

	dQ2_H	dQ2_L	Total
Tier_H	24	25	49
Tier_M	5	12	17
Tier_L	13	13	26
Total	42	50	92

($\chi^2 = 2.224, p = 0.329$)

From Tables 3 and 4 above, the preliminary results showed that the rank of the investment bank has no effect on quality of the deal, since the test statistics associated with both the one year and two year changes in Tobin's Q measure are not significant at five or ten percent levels.

To address the question of whether investment banks are niche players, we tested the null hypothesis that investment bank's rank does not affect method, size or type of acquisition. This is done with Chi squared tests which separates rank by tier and cross tabulate it with the categories in question. The tables below show the results.

Table 5: Chi Squared Test for Method and Tier

	Tier_H	Tier_M	Tier_L	Total
Cash	27	6	15	48
Mixed	20	4	6	30
Stock	19	12	16	47
Total	66	22	37	125

($\chi^2 = 6.555, p = 0.161$)

Table 6: Chi Squared Test for Type and Tier

	Tier_H	Tier_M	Tier_L	Total
Acq	44	12	29	85
Merger	3	3	1	7
TO	19	7	8	34
Total	66	22	38	126

($\chi^2 = 5.049, p = 0.282$)

Table 7: Chi Squared Test for Size and Tier

	Tier_H	Tier_M	Tier_L	Total
Size_H	28	2	9	39
Size_L	40	20	29	89
Total	68	22	38	128

($\chi^2 = 9.252$, Sig. = 0.010)

From tables above, we see that the method, type and size variables are significant at levels of 0.161, 0.282 and 0.010 respectively. Therefore, at the 5% level, we cannot reject the null hypothesis that the method and type of the deal have no relationship with the rank of the bank. However, we do reject the null hypothesis for the rank versus deal size independence and conclude that the rank of the bank has an association with the size of the deal. An inspection of Table 7 shows that the highest tier banks tend to complete larger deals. This is confirmed by conducting a correlation analysis on rank versus size which showed a Pearson correlation of -.225, and had a one-tailed significance of 0.002. Thus, rank is negatively correlated with size of deal. Since a top tier bank has a low rank value, this means that high tier banks are niche players in large valuation deals while low tier banks are niche players in low valuation deals.

To address the question of what factors are associated with completion time, several null hypotheses were tested. This was done with Chi squared tests, separating the completion time into above and below average to see which of the five variables – method, type, size, multiple, and tier would show an association with completion time. Tables below show the results.

Table 8: Chi Squared Test for Method and Time

	Time_H	Time_L	Total
Cash	14	34	48
Mixed	13	17	30
Stock	15	32	47
Total	42	83	125

($\chi^2 = 1.757$, $p = 0.415$)

Table 9: Chi Squared Test for Type and Time

	Time_H	Time_L	Total
Acq	33	52	85
Merger	1	6	7
TO	9	25	34
Total	43	83	126

($\chi^2 = 2.946$, $p = 0.229$)

Table 10: Chi Squared Test for Size and Time

	Time_H	Time_L	Total
Size_H	23	16	39
Size_L	20	69	89
Total	43	85	128

($\chi^2 = 16.197$, $p < 0.001$)

Since the p value obtained is less than 5%, we reject the null hypothesis that the size of the deal has no association with its completion time. Therefore, in the regression analysis explaining the completion time, the size of the deal will be considered.

Table 11: Chi Squared Test for Multiple and Time

	Time_H	Time_L	Total
Single	17	64	81
Multiple	26	21	47
Total	43	85	128

($\chi^2 = 16.714, p. < 0.001$)

From the above table, we see that at 5% level, the completion time of a deal is associated with multiple advisors involved in a deal. Therefore, the null hypothesis was rejected in favour of the alternate hypothesis. This is consistent with the expectation the multiple advisors will increase the time for completion as coordination becomes difficult.

Table 12: Chi Squared Test for Tier and Time

	Time_H	Time_L	Total
Tier_H	24	44	68
Tier_M	3	19	22
Tier_L	16	22	38
Total	43	85	128

($\chi^2 = 5.250, p. = 0.072$)

As shown from the tables (8, 9, 12), the significance values for time vs. method, type, and tier are 0.415, 0.229, 0.072 respectively. Therefore, at the 5% level, we cannot reject the null hypothesis that the method and type of the deal have no relationship with the completion time. Even though the top tier banks showed a better completion time than the second tier banks, the third tier banks had the best relative completion time. However, none of these differences were significant at the 5% level. So we are not able to draw conclusions for rank versus time analysis. This needs to be revisited in the regression analysis.

To address the question of whether lagged market share or rank of the advising bank affect the quality of the deal, regression analysis is needed. However, with the numerous categorical variables, we had to conduct inclusion tests so that we use dummy variables only for categories that showed some association. This was done with Chi squared tests separating the change in Tobin's Q into above and below average for both the one and two years measures to see which of the categories – method, type and number of advisors, has as an association.

Table 13: Chi Squared Test for Method and dQ1

	dQ1_H	dQ1_L	Total
Cash	22	26	48
Mixed	6	24	30
Stock	11	36	47
Total	39	86	125

($\chi^2 = 7.872, p. = 0.020$)

Table 14: Chi Squared Test for Type and dQ1

	dQ1_H	dQ1_L	Total
Acq	25	60	85
Merger	0	7	7
TO	15	19	34
Total	40	86	126

($\chi^2 = 5.871, p. = 0.053$)

Table 15: Chi Squared Test for Number of Advisors and dQ1

	dQ1_H	dQ1_L	Total
Single	27	54	81
Multiple	15	32	47
Total	42	86	128

($\chi^2 = 0.027, p. = 0.869$)

As shown from the above tables (13 & 14), the payment method and the type of the deal have association with quality of the deal. Therefore, the dummies for cash, stock, merger and tender offer were considered in the regression analysis. We could not reject the null hypothesis that multiple advisors had no association with the quality of the deal.

Table 16: Chi Squared Test for Method and dQ2

	dQ2_H	dQ2_L	Total
Cash	21	17	38
Mixed	7	10	17
Stock	11	23	34
Total	39	50	89

($\chi^2 = 3.886, p = 0.143$)

Table 17: Chi Squared Test for Type and dQ2

	dQ2_H	dQ2_L	Total
Acq	25	31	56
Merger	2	5	7
TO	13	14	27
Total	40	50	90

($\chi^2 = 0.865, p. = 0.649$)

Table 18: Chi Squared Test for Number of Advisors and dQ2

	dQ2_H	dQ2_L	Total
Single	28	31	59
Multiple	14	19	33
Total	42	50	92

($\chi^2 = 0.216, p = 0.642$)

As shown from the tables (16 – 18), we cannot reject the null hypothesis that the method, type and the multiple advisors have no association with the quality of the deal based on long term performance. We observe that the consideration method and type of deal have significant relation with near term performance, but the effect is not significant with a year later performance.

4.2 Regression Analysis

To investigate further about the variables that explain the performance and completion time, we used linear regression analysis. More specifically, the following hypotheses are tested:

H_a. The reputation of investment bank measured by the rank of investment bank or its past market share does not affect the quality of the deal in terms of value enhancement.

H_b. The rank of investment bank, does not affect the time spent on completing the deal.

In addition to the categorical control variables verified earlier, we need to check for the importance of two continuous variables, time and size. If these variables are significant in explaining the quality of a deal, they must be included as control variables. To see this, an inclusion test is conducted with the following regressions:

$$\begin{aligned} dQ1 &= \alpha + \beta_1 * \text{Time} + \beta_2 * \text{Size} + \varepsilon \\ dQ2 &= \alpha + \beta_1 * \text{Time} + \beta_2 * \text{Size} + \varepsilon \end{aligned} \quad (2)$$

If the coefficients β_1, β_2 are found to be significantly different from zero at the 5% level for either dQ1 or dQ2, then the corresponding variables will be included. The results are shown in the following tables.

Table 19: Linear Regression Inclusion test for dQ1

	Estimate	Std. Error	<i>t</i>	<i>p</i> value
(Intercept)	-0.79755	0.28015	-2.84687	0.00516
Size	0.00000	0.00008	0.00994	0.99209
Time	0.00288	0.00228	1.26143	0.20950

(*N* = 128, *R*² = 0.012, *F* = 0.845, *p* = 0.432)

Table 20: Linear Regression Inclusion test for dQ2

	Estimate	Std. Error	<i>t</i>	<i>p</i> value
(Intercept)	-0.94795	0.37783	-2.50890	0.01392
Size	0.00002	0.00010	0.18502	0.85363
Time	0.00385	0.00299	1.28594	0.20180

(*N* = 92, *R*² = 0.020, *F* = 0.912, *p* = 0.406)

As seen from the tables, neither size nor time is significant at the 5% level for either dQ1 or dQ2. Thus, these continuous variables are not considered for regression analysis.

Regression Analysis

To test the superior deal hypothesis we ran linear regression. The dependent variable is the performance measure change in Tobin's Q and the primary independent variable is the reputation of the bank measured by either the rank or market share. The control variables that are identified relevant earlier are also added as independent variables using dummy variables for cash, stock, merger and tender offer. We estimated the following equations using OLS to see the effect of rank and lagged market share on change in Q after one and two years respectively:

$$\begin{aligned} dQ1 &= \alpha + \beta_1 * \text{Rank} + \beta_2 * \text{Cash} + \beta_3 * \text{Stock} + \beta_4 * \text{Merger} + \beta_5 * \text{TO} + \varepsilon \\ dQ2 &= \alpha + \beta_1 * \text{Rank} + \beta_2 * \text{Cash} + \beta_3 * \text{Stock} + \beta_4 * \text{Merger} + \beta_5 * \text{TO} + \varepsilon \\ dQ1 &= \alpha + \beta_1 * \text{Lagged_MS} + \beta_2 * \text{Cash} + \beta_3 * \text{Stock} + \beta_4 * \text{Merger} + \beta_5 * \text{TO} + \varepsilon \\ dQ2 &= \alpha + \beta_1 * \text{Lagged_MS} + \beta_2 * \text{Cash} + \beta_3 * \text{Stock} + \beta_4 * \text{Merger} + \beta_5 * \text{TO} + \varepsilon \end{aligned}$$

The results of the regression as well as ANOVA analysis are presented in following tables:

Table 21: OLS Regression with Rank on dQ1

	Estimate	Std. Error	<i>t</i>	<i>p</i> value
(Intercept)	-0.262	0.461	-0.568	0.571
Rank	-0.007	0.037	-0.196	0.845
Cash	-0.206	0.427	-0.483	0.630
Stock	-0.041	0.475	-0.087	0.931
Merger	-0.339	0.751	-0.452	0.652
TO	-0.281	0.405	-0.693	0.490

($N = 124$, $R^2 = 0.010$, $F = 0.229$, $p = 0.949$)

Table 22: OLS Regression with Rank on dQ2

	Estimate	Std. Error	<i>t</i>	<i>p</i> value
(Intercept)	0.265	0.682	0.389	0.699
Rank	-0.026	0.049	-0.517	0.606
Cash	-0.690	0.626	-1.102	0.274
Stock	-0.434	0.715	-0.607	0.545
Merger	-0.246	0.910	-0.270	0.788
TO	-0.355	0.564	-0.629	0.531

($N = 88$, $R^2 = 0.026$, $F = 0.443$, $p = 0.817$)

Table 23: OLS Regression with Lagged_MS on dQ1

	Estimate	Std. Error	<i>t</i>	<i>p</i> value
(Intercept)	-0.497	0.206	-2.411	0.018
Lagged_MS	-0.706	1.133	-0.623	0.535
Cash	0.518	0.218	2.374	0.020
Stock	0.229	0.229	1.003	0.319
Merger	-0.403	0.333	-1.210	0.229
TO	0.115	0.206	0.560	0.577

($N = 102$, $R^2 = 0.091$, $F = 1.934$, $p = 0.096$)

Table 24: OLS Regression with Lagged_MS on dQ2

	Estimate	Std. Error	<i>t</i>	<i>p</i> value
(Intercept)	-0.026	0.323	-0.082	0.935
Lagged_MS	-0.415	1.267	-0.327	0.745
Cash	0.028	0.318	0.089	0.929
Stock	-0.226	0.344	-0.656	0.514
Merger	-0.403	0.360	-1.122	0.266
TO	0.014	0.264	0.052	0.959

($N = 67$, $R^2 = 0.065$, $F = 0.858$, $p = 0.514$)

From Tables 21-24 we see that in the four regressions, neither Lagged_MS nor rank are significance at the 5% level since the p value were all greater than 0.05. The sign of the rank variable supported the superior deal hypothesis, but that is not the case with lagged market share. However the variables are not significant as indicated. Thus, we cannot reject the null hypothesis that the rank or market share of the bank has no effect on the quality of the deal at the 5% level.

Regression Analysis: Completion Time Revisited

Previously, we found that Size and presence of multiple advisors had a significant effect on Time, but could not draw conclusions about time for completion and the rank of advisor. The following regression investigates the relation.

$$\text{Time} = \alpha + \beta_1 * \text{Rank} + \beta_2 * \text{Size} + \beta_3 * \text{Multiple} \quad (3)$$

The results are presented in Table 25.

Table 25: OLS Regression with Rank on Time

	Estimate	Std. Error	t	p value
(Intercept)	87.048	14.652	5.941	0.000
Rank	0.151	1.266	0.119	0.905
Size	0.006	0.003	1.985	0.049
Multiple	21.959	11.675	1.881	0.062

($N = 169$, $R^2 = 0.061$, $F = 3.616$, $Sig. = 0.014$)

We reject the null hypothesis that rank has an effect on completion time since the p value for rank is less than 0.05.

At this point the issue that remains would be to determine the factors that influence the managers' decision for choosing the top tier investment bank given that they do not perform better than lower quality banks. A Linear regression is conducted where the dependent variable is the current market share for the years 2001 through 2008. The explanatory variables are the past performance of the bank (in terms of the average Tobin's q measure change that its past clients have experienced) and the one year lagged market share of the bank. The coefficients of the variables are estimated; the results are shown in table below.

Table 26: Linear Regression of Market Share on Lagged Market Share and Performance (N = 504)

	Estimate	Std. Error	t	p Value
(Intercept)	0.010784	0.004194	2.571	0.0109
Lagged Market Share	0.438392	0.075002	5.845	2.03E-08
Difference in Q after one year	-0.007103	0.01007	-0.705	0.4814
Difference in Q after two years	0.004453	0.006565	0.678	0.4984

The results show that difference in Q for both time periods were not significant at the 5% level. However, the lagged market share is significant at the 5% level. Therefore, we have sufficient evidence that lagged market share affects the choice of the managers. These findings shows that managers tend to consider past market share instead of the performance of the advisers when hiring such advisers for M&A advisory services. One could argue that managers are not concerned much about maximizing shareholder value in these transactions, but rather go for advisers that have completed more deals because they trust that such advisers have a greater potential of completing a deal irrespective of whether a deal would be enhancing value or not.

5. Limitations and Conclusions

In this study, we tested the superior deal hypothesis and deal completion hypothesis that are put forward as motivation for choosing the top tier investment banks. We used the change in Q after one and two years of merge as the performance variable and used average rank and the previous year market share as the variables to capture investment bank quality. The results showed no significant effect of rank or lagged market share on the quality of the deal or completion speed. In other words, the results gave no support to either of the two hypotheses. However, the results did support that investment banks are niche players in terms of size, but top ranked banks complete large deals while the low ranked banks complete smaller deals. With regard to the superior deal hypothesis, our results were consistent with both Rau (2000) and Walter et al. (2008), because they also showed that the top tier investment banks did not perform better than the lower tier banks. As for the deal completion hypothesis, our results differed from those obtained by these researchers. However, our results added some evidence to Da Silva Rosa et al. (2004) conclusions that M&A advisers are niche players. That is, they specialize depending on the characteristics of the deal.

The results have to be reviewed in the context of following limitations: First, the data used in examining the market share of the investment bank and the performance of acquiring firm were limited because they only included deals that were completed. Therefore, the deal completion probability could not be tested since the data had no withdrawn deals that could be used. Most studies discussed in section two have shown that there is a positive relationship between the investment bank market share and the performance of acquiring companies. Those who argued in favor of top quality advisors believe that such banks have high probability of completing a deal because they have better expertise and resource than lower quality banks. Ability to complete a deal is also considered a crucial factor when considering M&A advisor. The other limitation was to the effect that a good number of Canadian M&As were excluded from the sample because they were not trading in Toronto Stock Exchange (TSX). Only M&As which involved companies that had their financials available on Canadian publicly available databases such as Financial Post and Sedar were considered. Most of the deals which were excluded were advised by some of the American top tier investment banks or their subsidiaries which might have shown better results. The data used had majority of deals described as acquisition, while quite a limited number of them were classified as mergers or tender offers. Therefore, lack of clear identification for most of the deals might have affected the results obtained in the study.

The method used in measuring the performance of the acquirer also had its own inherent limitations. Since the Q measure was geared towards addressing the questions such as “are the shareholders better off after the deal than they were before”, Bruner (2004) considers such a measure as a weak form test of M&A profitability. He argued that the before and after comparison is a weak test because it fails to control for the other factors that might have triggered a price change, unrelated to the deal. In spite of all the limitations, this study provides additional evidence to Rau (2000) and Walter et al. (2008) studies in a market outside of USA. Similar studies across different countries will enhance the generalizability of the conclusions.

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Appendix I

(A larger sample of 220 deals was used to obtain the following results.)

Table 27
Chwe Squared Test for Method and Time

	Time_H	Time_L	Total
Cash	25	53	78
Mixed	21	32	52
Stock	27	57	84
Total	73	141	214

($\chi^2 = 1.203$, $p = 0.548$)

Table 28
Chwe Squared Test for Type and Time

	Time_H	Time_L	Total
Acq	56	95	151
Merger	4	12	16
TO	15	36	51
Total	74	143	218

($\chi^2 = 1.672$, $p = 0.434$)

Table 29
Chwe Squared Test for Size and Time

	Time_H	Time_L	Total
Size_H	31	23	54
Size_L	44	122	166
Total	75	145	220

($\chi^2 = 17.316$, $p = 0.000$)

Table 30
Chwe Squared Test for Multiple and Time

	Time_H	Time_L	Total
Single	38	113	54
Multiple	36	32	166
Total	74	145	219

($\chi^2 = 16.168$, $p = 0.000$)

Table 31
Chwe Squared Test for Tier and Time

	Time_H	Time_L	Total
Tier_H	31	60	91
Tier_M	23	22	28
Tier_L	6	28	51
Total	60	110	170

($\chi^2 = 4.564$, $Sig. = 0.102$)

Calculations for dQ1 and DQ2 only include 156 deals for which the financial statements were available.

Table 32
Chwe Squared Test for Method and dQ1

	dQ1_H	dQ1_L	Total
Cash	27	31	58
Mixed	7	29	36
Stock	12	45	57
Total	46	105	151

($\chi^2 = 11.533, p. = 0.003$)

Table 33
Chwe Squared Test for Type and dQ1

	dQ1_H	dQ1_L	Total
Acq	32	78	110
Merger	0	7	7
TO	17	21	38
Total	49	106	155

($\chi^2 = 6.587, p. = 0.037$)

Table 34
Chwe Squared Test for Method and dQ2

	dQ2_H	dQ2_L	Total
Cash	24	20	58
Mixed	10	12	36
Stock	13	29	57
Total	47	61	151

($\chi^2 = 4.908, Sig. = 0.086$)

Table 35
Chwe Squared Test for Type and dQ2

	dQ2_H	dQ2_L	Total
Acq	34	41	75
Merger	2	5	7
TO	15	15	30
Total	51	61	112

($\chi^2 = 1.055, p. = 0.590$)

Table 36
Chwe Squared Test for Multiple and dQ2

	dQ2_H	dQ2_L	Total
Single	39	42	81
Multiple	14	19	33
Total	53	61	114

($\chi^2 = 0.309, Sig. = 0.578$)

Table 37
Linear Regression Inclusion test for dQ1

	Estimate	Std. Error	<i>t</i>	<i>p</i> value
(Intercept)	-0.61511	0.19940	-3.08476	0.00242
Size	0.00001	0.00007	0.10893	0.91340
Time	0.00126	0.00129	0.97377	0.33170

(*N* = 156, $R^2 = 0.006$, $F = 0.500$, $Sig. = 0.608$)

Table 38
Linear Regression Inclusion test for dQ2

	Estimate	Std. Error	<i>t</i>	<i>p</i> value
(Intercept)	-0.63554	0.26467	-2.40126	0.01800
Size	0.00002	0.00009	0.18333	0.85487
Time	0.00151	0.00161	0.93940	0.34956

(*N* = 113, $R^2 = 0.008$, $F = 0.473$, $Sig. = 0.624$)

Endnotes

¹ Chessiecap Inc, is a team of transaction professionals that leverages exceptional investment banking, strategy and technology expertise to drive premium value transactions. See www.chessiecap.com for more details.

² Sedar is a database of information filed with the securities commissions by Canadian public companies and investment funds from 1997 on. It includes company profiles, annual reports, press releases, financial statements and more. see http://sedar.com/search/search_form_pc_en.htm

³ KPMG advisory division commonly use Thomson Financial database. (see www.kpmg.ca for more details)

⁴ Studies that have used Thomson Financial database in M&A include in Rau (2000), Walter et al.(2008),Michel et al. (1991) and Dunbar (2000).