Interlocking Directors: Impact on Canadian Merger and Acquisition Outcomes

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ABSTRACT

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This paper examines the effect(s) of interlocking boards on the outcomes of merger and acquisition transactions in Canada. Among the most significant results of this paper is evidence indicating that merger deals with an interlocking relationship, i.e. having one or more shared directors between the transacting firms, results in higher cumulative abnormal returns the target and acquiring firms. Merging firms with interlocking directorates were found to be more successful during the merger process, have a higher likelihood of transacting with cash, and have a significantly higher frequency of toeholds as well as higher toehold percentage ownership. This paper also presents a brief snapshot of the Canadian market for corporate control by documenting various firm and board characteristics, such as firm size, the fraction of inside, outside, grey and female directors serving on the average sample firm, as well as the average tenure of directors, and the average amount of share ownership held by directors, as well as how these characteristics influence the likelihood of interlocks between firms. A higher than average number of women and grey directors were found to have significantly positive effect on the propensity of interlocks, whereas, surprisingly, larger firm size had the reverse effect.

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I. Introduction

Interlocking directorates are a potent and visible sign of corporate relationship networks. In fact, one could label them the archetypal representation of professional interconnections. Formally defined, interlocking directorates (or directorships) are created when an individual simultaneously holds a board position with two or more different corporations. A broader definition of interlocking directorates takes into account the notion that an interlock is created even when an individual does not hold two board memberships concurrently; rather it occurs when an individual holds a position on one firm's board while simultaneously someone who is very close to this individual (for example a family member, an executive officer of the firm on whose board this individual sits, or a professional contact such as a law partner or business partner) holds a seat on another firm's board. Thus, interlocks can be either ***direct interlocks***, where the same person holds board seats on separate firms' boards, or ***indirect interlocks***, where two closely connected and / or related individuals hold seats on different firms' boards.

The goal of this thesis is to contribute to the further understanding of the effects of interlocking directorates; more specifically – how do interlocking directorates affect the value creation, or destruction, during a merger and / or acquisition process. In this thesis we focus on the impact of direct interlocks as these relationships are expected to have the strongest impact on firm behaviour. Due to its structural characteristics, such as its relatively small pool of directors, large number of firms, and accommodating regulatory environment, the Canadian M&A market was chosen as the object of study. As such, the sample of study used in this thesis was composed exclusively of the Canadian business entities.

Among the most significant results of this paper is evidence indicating that merger deals with an interlocking board relationship result in higher shareholder wealth creation as measured by the cumulative abnormal returns. Furthermore, the existence of an interlocking relationship has also been found to be a significant toe-hold between the merging entities. This paper also presents a brief snap shot of the Canadian market for corporate control by documenting the characteristics of Canadian boards and how these characteristics influence the existence of interlocks. A higher average number of women and grey directors were found to have significantly positive effects on the existence of interlocks, and, surprisingly, large firm size had the reverse effect. Firms with interlocking directorates were found to be more successful during the merger process, have a higher likelihood of transacting with cash, and have significantly higher occurrences of toeholds as well as higher toehold percentage ownership.

The paper begins by detailing the motivation behind the thesis topic. Next, a review of the literature is presented – specifically detailing the difference between the inter-organizational and intra-class approaches to studying interlocks. Based on this literature, the testable hypotheses are developed and presented. The data and sample collection process is then described, followed by the presentation of the paper's results and a discussion of their interpretations. Finally, the conclusions of this paper are discussed and recommendations for future research are presented.

II. Research Motivation

As previously mentioned, this study focuses on how interlocking directorates affect the value creation, or destruction, during a merger and / or acquisition in Canada. The Canadian market was chosen as the object of study due to its regulatory and structural

characteristics, which allow for the existence of interlocking boards among its corporate entities. However, in choosing to conduct this study within the Canadian capital market, four of this market's most prominent characteristics, discussed below, had to be taken into consideration due to their expected positive and negative effects on thesis outcomes and data collection process.

First, and most significant for this thesis, Canadian capital markets are noted for their centralization, or perhaps more appropriately, the pooling of control among a relatively small number of firms with respect to the total number available in the market. To illustrate, the 100 largest Canadian firms comprise more than 70% of the total market capitalization, and less than 20% of the largest firms on the Toronto Stock Exchange account of 85% of the exchange's market capitalization (Nicholls, 2006, p. 154). This characteristic should contribute to a higher frequency of observing interlocking-directorates among all firms in general, and more specifically those taking part in merger and acquisition activity.

The second significant characteristic of the Canadian capital market is that in spite of existing in the second largest nation, in km^2, it is very small compared to other developed nations' financial markets. Nicholls (2006) cites statistics from the World Federation of Exchanges (2004 data) showing that

> ...the total market capitalization of Canada's stock exchanges was about US$1.178 trillion, whereas the total market capitalization for all WFE exchanges was about US$37.168 trillion during the same period. Thus, Canada's markets constituted about 3.17% of total market capitalization worldwide. To put this number in perspective, the NYSE's market capitalization as of 2004 was US$12.708 trillion (34.19%), the

> American Stock Exchange's market capitalization was US$83.302 billion (0.22%), NASDAQ's market capitalization was US$3.533 trillion (9.51%), the London Stock Exchange's market capitalization was US$2.865 trillion (7.71%), and the Deutsche Borse's market capitalization was US$1.195 trillion (3.22%).(149)

As such, the problem of thin or no-trading data for many firms is a problem when dealing with research based solely in Canada. Lack of trading data is expected to be a major hurdle during the data collection process of this paper.

Third, despite Canada's size, its capital markets are under-represented on the world stage, relative to smaller sized nations. However, inversely, the number of firms that exist within Canada is relatively large. According to Nicholls (2006) there are approximately 3,500-4,000 publicly traded firms in Canada (as of December 31, 2005). That value increases to a total of 2 million when adding all the non-traded firms. The number of firms existing will aid in the data collection process required for this thesis as is it expected to increase the likelihood of observing an interlocking relationship between firms involved in a merger and / or acquisition transaction. In addition, this characteristic will help mitigate the issues regarding thin or no-trading data mentioned earlier.

Lastly, an interesting attribute of the Canadian capital market is that the majority of firms are privately held. In addition the Canadian market is heavily influenced by firms operating in natural resources and the financing (mainly banking), with over 65% of TSX's market capitalization being owned by firms within the Oil and Gas, Financial Services and the Mining Sector. Indeed, the sample on which this paper's research was conducted was overwhelmingly (≈ 67% of all deals) made up of firms operating directly in the natural resource market. This attribute will, of course, hinder the data collection

process, as private firms do not publish the board composition data required by this thesis. However, this set back is somewhat mitigated by virtue of the relatively large number of firms existing in Canada, as noted previously. As such, it is the combination of these four main characteristics that make Canada the ideal locale in which to conduct this study on the effects of interlocks during M&A transactions.

III. Literature

i. Inter-Organizational versus Intra-Class Analysis of Interlocks

The subject of interlocking boards is a topic that often provokes heated discussion among both academics as well as legislators because of the potential that interlocking boards have to being tools that facilitate management ***agency*** problems (Jensen and Meckling 1976). However, interlocking directors, as all directors in general, also have the potential to be agents of shareholder ***wealth maximization*** due to the guidance, leadership, and experience they can provide to a firm's management. According to Donald Palmer "interlocks have been studied from two different but compatible perspectives", which are referred to as the ***inter-organizational*** and the ***intra-class approaches*** (Palmer, 1983, p. 40). Within the context of Palmer's work, the inter-organizational aspect of board interlocks is akin to the aforementioned shareholder wealth-maximization potential, whereas the intra-class approach is the study of the agency driven aspects of interlocks.

Palmer's reference to inter-organizational study of interlocks relates to the study of how firms, as individual entities in and of themselves, have social and professional interests and actually encourage the existence of interlocks in order to create and nurture relationships with other firms in order to learn. In this context, the interlocking

directorate, the board seat itself and the person who occupies it, is viewed as evidence of the relationship between otherwise independent firms. The men and women who occupy these positions are the conduits through which this relationship is exchanged and expressed. According to Dooly (1969), Allen (1974), Pfeffer and Salancik (1978), Burt (1979), and Palmer (1983), the interlocking relationship provide its participants, the two or more interlocked firms, with a variety of advantages, not the least of which is the ability, or in some cases the mere *opportunity*, to share information; access to this scarce and valuable resource thereby enables each party to formulate and apply respective competitive strategies more effectively. Palmer, citing Blair (1976) expands further on the "benefits" of interlocking directorates by stating that these relationships

> ...may even provide the basis for tacit forms of inter-organizational coordination, such as anticompetitive price setting [and] interlock ties may also allow partners to influence one another's board-level policies, thus providing the basis for stronger forms of inter-organizational coordination. (40)

As a caveat, Palmer (1983) proposes that if this inter-organizational linkage is "based solely on the commitments of the interlocking director(s) to the members of the two boards on which he or she sits, coordination will crystallize or dissolve as situations change" (p. 40). This means that if the interlocking relationship is driven by the individual director's personal objectives (be they social, professional or otherwise) rather the objectives firms he/she represents then the effects of the interlocking relationship on the interlocked firms, whatever they maybe, will only be secondary to the outcomes desired by the individual director that holds that interlocking position.

As such, the inter-class view of interlocking directorates and their impact on inter corporate dynamics argues that "individuals within the capitalist class or business elite are actors who possess interests. Organizations are the agents of these actors. In pursuit of their interests, capitalists establish relationships with other capitalists" (Domhoff 1967, 1971, and Roy 1981). In this definition, the interlocking relationship is established to serve the requirements and ambitions of the directors themselves as opposed to being a tool used by the organization to advance their own social and competitive goals. According to Koenig and Gogel (1981) the over-arching result of director intentions that result in overlapping boards, may be termed "the social network." Given that the development and nurturing of this social network is the initial reason why particular directors choose to take on the responsibility of sitting on various corporate boards, Palmer argues that the significance of the interlocking relationships to the organizations themselves can then be divided into two categories. First, firms who have one or more of their directors sitting on other boards can exploit these interlocking relationships by attempting to dictate the nature of the relationship itself – whether it will exist at all, and if so to what extent – *only* if the interlocked director(s)' principle allegiance is to that said firm. This way, organizations can then control the amount and type of information shared between the interlocking director(s) and the social networks. A prominent, and relatively recent[1], example of firms dictating the nature of an interlocking relationship occurred when Google CEO Eric Schmidt resigned his board seat at Apple Inc., with mutual consent, citing rising conflict of interests after Google launched a competing web browser to one already made by Apple. Even though it is claimed that Schmidt would leave portions of Apple's board meetings when the topic of Google was discussed,

[1] August 3, 2009

Google's foray further into markets already occupied by Apple meant that he had to sequester himself further from board meetings. Finally, the decision was made that the interlocking relationship, however carefully monitored, allowed too much information to be potentially pass from one firm to another. Thus Google recalled its CEO from Apple's board, and thus inevitably put an end to the interlocked relationship. Second, given that the director(s)' primary concerns instead lie towards the interests and / or activities within the various social groups they belong to outside their organizations, the benefits of the interlocking directorship may not be observed directly by the organizations on which these individuals serve as board members. Instead, the interlocking directorships

> ...will direct interaction and the communication of techniques, values, and beliefs between directors, thereby generating a common business elite or capitalist class culture that guides managerial behaviour, socializes new directors into this culture, and socially controls deviant managerial behaviour. As such director's prominence and power within the business elite or capitalist class depends on his or her position in the social network, and not on their position in any one particular firm. (Palmer 42)

This phenomenon is referred to by Kenig and Gogel (1981) as the ***hegemony model*** of the intra-class approach to studying interlocks. In essence, directors' own social networking will indirectly help the firms he / she are associated with by virtue of the bond created during social networking. This social familiarity between directors, it is argued, will facilitate communication and interaction within a business context.

Alternatively, several authors such as Zeitlin, Ratcliff, and Ewen (1974), Useem (1978) and (1979), and Ratcliff (1980) have suggested the "inner group centrality"

argument, which focuses on the number of board seats directors hold as indicators prominence and / or power, whilst others like Soref (1980) look to whether directors hold board seats at financial institutions, thereby measuring their "finance capitalist status" (Palmer, 1980, p. 42). In addition, Palmer argues that directors' status within the corporate board social network, is inherently affected by their status in other social groups such as private club membership, government association etc. (Palmer, 1983, p. 42). This is a crucial point to make since it can be assumed that directors' relationships and interactions outside the context of their professional positions will undoubtedly affect the interactions they have, or will have, within their professional environment. Ultimately, the culmination of these interactions, whether they are value increasing or decreasing, will be borne by the shareholders. This is why corporate directorships are studied with such intent.

Using both the "inter-organizational" and the "intra-class" theories lead to the notion that interlocks serve to mitigate inter-organizational differences and enhance interactions. Penning (1983) commented on this, saying;

> ...compared with interlocking directorates, mergers are a very radical and thorough solution to the problems associates with the management of inter-organizational relationships. Vertical integration resolves the transactional difficulties by harmonizing the interest of two previously adversary firms. By grouping two firms into a single organization, transactional haggling, opportunism, and uncertainty that contaminate buyer-seller relationships are circumvented. Indeed, the new firm ensures more complete, accessible and undistorted information among the previously transactionally interdependent

> partners and partially removes the uncertainty so that they obtain more complete control over the environment. It also removes the need for costly contract negotiations and renewals, and for the enforcement of the agreements…Horizontal [competitive] merges may accrue benefits for the participating organizations because mergers may alter the market structure or because they perform an intelligence function from the organizations involved. (pages 110-111)

In so much as interlocks appear to facilitate the sharing of information between firms they are almost prohibited from existing in the United States. The 1914 Clayton Act[2] effectively limits interlocking directorates, but does not outlaw it specifically. In fact, Louis Brandeis, one of President Woodrow Wilson's chief advisors on trust problems described interlocking directorates as

> ...the root of many evils. It offends laws human and divine. Applied to rival corporations, it tends to the suppression of competition and to violation of the Sherman Act[3]. Applied to corporations which deal with each other, it tends to disloyalty and to violation of the fundamental law that no man can serve two masters. In either event it leads to inefficiency; for it removes incentive and destroys soundness of judgment. It is undemocratic, for it rejects the platform: "A fair field and no favours,"-substituting the pull of privilege for the push of manhood (Dooley 314)

In stark contrast to section 8 of the aforementioned Clayton Act, which specifically "prohibits a person from serving as a director, or a board-appointed officer, of two or

[2] The Clayton Act addresses to topic of price discrimination, mergers and acquisitions, exclusive dealings, and interlocking directorates; enacted in 1914.
[3] The Sherman Act addresses the subject of agreements and monopolistic practices; enacted in 1890.

more *competing* corporations (subject to certain materiality thresholds)[4], the Canadian Competition Act does not contain any articles that specifically address the subject of interlocking directorships, but rather this topic is addressed in policy statements published by the Canadian Bureau of Competition's Merger Enforcement Guidelines (MEGs). However, the Canadian Competition Act does not ignore the subject of interlocking relationships or its implications. Instead, it recognizes the intricacies of these corporate relationships and makes specific provisions as to when and how these relations should be investigated in order to maintain the competitive integrity of the Canadian capital markets. According to Canadian law, for interlocking directorships to come under review

> ...it must qualify as a "merger[5]" as defined in the Competition Act, i.e., it must be found to result in the "acquisition or establishment, direct or indirect, by one or more persons... of control over or significant interest in the whole or part of a business of a competitor, supplier, director, buyer, or other person. [Furthermore] for these purposes, a "significant interest" is defined by the Bureau as "the ability to materially influence the economic behaviour of the business". Interlocking directorships may also be reviewed if they are a feature of a larger transaction that otherwise qualifies as a "merger."(Katz 14)

As such, interlocking directorships are not as closely monitored in Canada as they are in the United States. Of concern to the Canadian Competition Bureau (*the Bureau*), is

[4] Katz, M, "*Canadian Merger Law and Interlocking Directorships/ Minority Shareholdings,",* Davies Ward Phillips & Vineberg LLP, North American Free Trade & Investment Report
[5] As opposed to a formal merger proposal

whether the interlocking directorate materially influences competition, and as such uses following guidelines[6]

1. The Bureau will consider three main points when examining the competitive implications of an interlocking relationship's ability to,
    - **a.** materially influence the economic behavior of the business
    - **b.** obtain confidential information
    - **c.** make changes to incentives
2. When making its assessment, the Bureau will explore the following factors
    - **a.** Any attached rights to minority interest shareholdings
    - **b.** The nature of competition in the relevant market
    - **c.** Dividend share of the minority interest in comparison to the equity ownership share
    - **d.** Any special powers, including voting or veto rights
    - **e.** Any special agreements or arrangements that could constitute a "material influence"
    - **f.** The composition of the board of directors
    - **g.** Board meeting attendance and voting patterns
    - **h.** The role and duty of the "interlocked" director, including the type of information to which the director has access
    - **i.** The practical extent to which the minority shareholder can exert pressure on the company's decision-making process (e.g., if it is the largest shareholder).

[6] Katz, M, "*Canadian Merger Law and Interlocking Directorships/ Minority Shareholdings,",* Davies Ward Phillips & Vineberg LLP

3. Passive minority shareholding can still come under review if it is found that it has had a material influence on economic behavior of the business
4. The Bureau considers structural remedies (as opposed to behavioral remedies) to be the most effective remedy, when dealing with concerns over interlocking relationships. Examples of structural remedies include
    a. Resignation of the interlocking director[7]
    b. Appointment of an independent director as a replacement[7]
    c. Removal of all Acquiring firms' representation on target firms' boards[8]
    d. Divestiture of all of the acquiring firms' interests in the target[8]
    e. Termination of all ancillary agreements[8]

In conclusion, although Canadian corporate law is not as decisive as American law on the matter of interlocking directorates, the issue is addressed and investigated when a need arises. This need arises when evidence is presented that the interlocking relationship is effectively a "merger." This is defined by whether the interlocking relationship allows for the "control over or significant interest" by one party over the other. Although the phrase "significant interest" is open to interpretation, the benefit of having such a statement allows firms operating in Canada the freedom to seek out inter-organizational relationships in order to gain knowledge without being legislatively restricted. This is of significance because there are several reasons why interlocks should (and should not) exist.

[7] As in the case of the acquisition of Sogides Ltée by Quebecor Media Inc.
[8] As in the case of the restructuring of Loews Cineplex

ii. Why Interlocks Exist

Although the subject of interlocking directorates has been discussed by many authors over the years, the specific joint topic of interlocking boards and merger activity has not been as extensively covered. This section of the paper will present a summary of the literature concerning interlocks and discuss how some of theories can be applicable to this paper's thesis.

The question that inevitably arises when the topic of interlocking directorates is proposed is; why do they exist? Although the "inter-organizational" and the "intra-class" theories provide two general motivating notions, shareholder wealth maximization and agency, behind the existence of interlocks, there exists within each of these theories three main drivers that attempt to explain why interlocks exist.

- **Agency Theory (Intra-Class)**
  - Firm Size
  - Management Control
  - Class Hegemony
- **Shareholder Wealth Maximization Theory (Inter-Organizational)**
  - Firm Size
  - Financial Health / Resource Dependency
  - Knowledge Transfer

As detailed in the lists above, ***firm size*** is a driver of board interlocks in both agency as well as wealth maximization scenarios. Peter Dooly's seminal paper (1973) argues that the size of the organizations plays a crucial role in the development and maintenance of interlocks, stating that

> The largest corporations tend to have the most interlocks. This may occur because the directors of the largest corporations are the most knowledgeable,

> the most capable, and the most accomplished men available. Other corporations would naturally seek their advice and would rather have them on their board than men of less ability. This may also occur, however, because of factors unrelated to managerial ability. The director of a giant corporation undoubtedly has more personal influence with other companies, with potential investors, and with the government than the common man. Having the director from a large corporation on your board may also lead to profitable business with that corporation. (316)

Dooly's argument of firm size as a driver for interlocks advocates the positive, wealth maximization, motivation for the relationship. Conversely, firm size can equally be a supporting attribute for the agency aspects of interlocks if the interlocking relationship is created solely for the purpose of expanding individual directors' power / influence or created as a result of managerial empire building. Patrick Gaughan's 2004 paper entitled *M&A Lesson: Beware of Empire Builders* presents evidence indicating that many of the largest M&A deals turned out to be huge failures because of managerial empire-building by CEOs[9] that were uncontrolled by ineffectual boards. Interlocks can perpetuate the *lazy board* phenomenon if the interlocking director is merely acting as a managerial pawn sent out by management in order to try to gain as much information[10] on potential acquisition target(s) in order to askew the problems associated with managerial hubris in corporate takeovers (such as overpayment) described by Roll (1986). With better market information, collected by the interlocking director(s), management can thus perpetuate its empire building objects.

[9] Firm CEOs' decisions can be views as proxies of decisions made by the entire management team.
[10] In essence, interlocked directors will act as scouts, collecting valuable market information.

A closely related, agency driven hypothesis for interlocks is the ***management control theory*** (Mace 1971 and Dooley 1973). This theory suggests that members of the board of directors are specifically chosen and hired by management in order to passively agree to management decisions. This view sees "management as isolated and independent from external pressures. Interlocks are considered accidental and serve little importance," (O'Hagan, Green 2004). Bebchuck, Fried, and Walker (2002) suggest that managerial control can also lead to managerial rent extraction, rubber-stamped by directors of their own choosing, as well as the tunneling of resources. However, evidence by Mintz and Schwartz (1985) details how interlocks between banks and other non-financial corporate form the basis of banks' control of capital flows and implies that interlocks are often not accidental and serve a specific and important purpose.

Last, the ***class hegemony*** theory (Koenig, Gogel 1975) places the onus of interlocking directorate on already existing social, familial, or other connections between upper / elite class individuals. As such interlocks exist to reaffirm these relationships / connections as well as to (ultimately) perpetuate them. In contrast to this idea Haunschild and Beckman (1998) argue that although interlocks do matter and that their effects are material, their effectiveness or influence is either increased or decreased with respect to certain conditions within the context of their existence. They suggest that since interlocking directorates provide information to the participating firms, then the interlock's effectiveness (and impact) should decrease or increase based on whether there are alternative sources (or lack thereof) for the same information. Overall,

> ...results provide evidence that alternate sources of information affect the influence of interlock partners on acquisition decisions[…]when interlocks matter,

they appear to matter less for large firms, for central firms, and for firms whose CEO belongs to the Business Roundtable or Business Council. Interlocks matter more for activities that get large amounts of business press coverage, and interlocks with similar firms matter more than interlocks with dissimilar firms.(839)

With respect to the shareholder wealth maximization motivators of interlocks, the ***financial health / resource dependency theories*** provide alternative drivers for the existence of interlocking directorates. These hypotheses suggest that, financially troubled firms and firms needing to secure access to certain resources, will tend to have closer relationships (hence interlocks in many cases) with the financial institutions and / or firms that can provide these needed resources. In the case of a financially troubled firm, for example, having an interlocking relationship with a financial institution will not only allow it to better navigate the intricacies of securing needed access to financial resources, but will reciprocally allow the interlocked financial firm the opportunity to place a representative on the borrowing firm's board and thereby gain improved access to the firm's inner workings and thus exercise more control of how financial resources are used. Ultimately, this will dictate how soon and how completely the financial firm is repaid. In summary, the financial health / resource dependency theories suggest that interlocks are value maximizing because they are created between firms in order to secure access to financial and / or material resources thereby reducing the uncertainly created by actively searching for them on the open market.

Finally, ***knowledge transfer theory*** argues that interlocks are a value maximizing corporate strategy because they are simply a mechanism through which knowledge and /

or information is transferred between organizations, individuals, or both. In essence, the existence of interlocks serves no other purpose than to provide a conduit through which information travels; in the case that an alternative, and more efficient, medium exists that delivers higher quantity and quality information, then interlocks will become inconsequential. As such, Haunschild and Beckman's argument that the effectiveness of interlocks will diminish in the presence of alternative (and perhaps more efficient and / or reliable) sources of information, supports the knowledge transfer theory and run counter to the class hegemony idea because the existence of class connections should not have any effect on firm performance if there exist alternative mediums through which board directors can obtain information pertaining to market competitors and / or allies. According to Carpenter and Westphal

> The direct communication between managers reduces ambiguity of knowledge transferred. . . learning is particularly vivid because directors observe the decision-making process firsthand in their monitoring role, participate actively by giving advice to management, and then witness the consequences of those decisions. This information is typically more timely and up-to-date than that derived from secondary sources, and it may also be more salient because of its recency. (2001)

In summary, the literature presented here divides the motivation for interlocking boards between the ***shareholder wealth maximization*** (inter-organizational) theory and the ***agency*** driven (intra-class) theory. Furthermore, within each of these hypothesis therein lays three specific drivers of interlocks. Within the agency theory, firm size, management control, and class hegemony are suggested as the agency drivers of

interlocks, whereas within the shareholder wealth maximization theory, firm size, financial health / resource dependency, and knowledge transfer are the shareholder wealth maximization arguments in favour of interlocks.

IV. Hypotheses and Methodology

As previously introduced, the main objective of this paper is to ascertain the effects interlocks have on the participants during a merger and / or acquisition. From the literature cited above, the purpose of the interlocking relationship can be to either support the personal goals of managers and directors (*agency*) or to transfer knowledge and give access to financial and other resources, all of which are needed to ensure the successful and profitable continuation the firms (*shareholder wealth maximization*). We expect that if the agency theory is the primary driver for the creating of interlocks, then mergers between interlocking firms should result in value destruction for shareholders of both firms, whereas if the shareholder maximization theory is instead the driving force, then transactions between interlocked firms should exhibit value creating for all shareholders.

To test for which of these hypotheses plays the most prominent role in motivating interlocks between firms, the first step will be to create portfolios of each merger pair (target and acquirer) where each firm's weight in the portfolio is equal to its size[11] relative to the total size of both firms in the deal. This is done in order to capture the joint effect (covariance between the two merging firms) of the interlock on the merger pair rather than just each individual firm. Next, the ***firm*** and ***board-specific*** characteristics of each entity within a merger pair will be used to predict the likelihood of an interlock existing between them. This step is taken in order to learn more about the elements that facilitate or hinder the creation of interlocks between any two firms. The firm-specific

[11] Proxied as the log of a firm's market capitalization

characteristic that will be tested will be *firm size*, and the board-specific characteristics will be *director share ownership*, *stock compensation*, *tenure*, and the *Fraction of outside*, *inside*, *grey*, and *women* directors.

Third, the resulting likelihood of interlock value among each pair of interlocking firms will be used as the explanatory variable to explain the manifestation of several ***deal-specific*** characteristics such as deal completion, method of payment, toeholds etc[12]. Lastly, the calculated likelihood of an interlock within each merger pair will be used to explain that pairs' cumulative abnormal returns from 30 days before the announcement of the merger to 60 days after the announcement[12].

Starting first with how the interlocking relationship relates to the firm specific characteristic ***firm size***, both the agency and shareholder wealth maximization drivers for interlocks will be evaluated using Logit regression to predict the propensity of interlocks given firm size. Under the shareholder wealth maximization perspective – we expect small firms to seek "experienced" and connected directors in order to gain the benefits of their experience. As such, we expect a higher number and / or percentage of small firm boards to be made up of interlocking directors than at larger firms. Conversely, under the agency theory we expect larger firms to contain more interlocks than smaller firms, as their more numerous directors are encouraged to sit on other firms' boards in order to obtain knowledge on possible future acquisition targets. Thus to test for these conjectures, the Logit regression that will be used will take on the following form, $\boldsymbol{P(Interlock) = \alpha + (\beta_1 * Size) + (\beta_4 * Control)}$, where *P(Interlock)* is the propensity to interlock, and *Size* is the natural logarithm of each firm's market capitalization, and *Control* are the independent control variables *NatRes* which takes on a

[12] For robustness purposes, the effects of observed (rather than predicted) interlock will also be tested

value of 0 when a firms belongs to the natural resource industry and 1 otherwise[13], and *RelSize*[14] which represents the relative size of each firm to its merger partner. In summary

- **H1**: Propensity to Interlock given ***firm size***

$$\boldsymbol{P(Interlock) = \alpha + (\beta_1 * Size) + (\beta_4 * Control)}$$

  - **SWM**[15]: Expect sign of β_1 to be negative
  - **Agency:** Expect sign of β_1 to be positive

Turning to bidder and target firms' individual board characteristics, their interactions with, and relationship to interlocks must be examined carefully due to the inevitable, and unavoidable, endogeneity issues that arise in determining which variables effect which. For example, are boards more likely to have outside directors because they have an interlocking relationship, or alternatively are interlocking relationships to be expected because a board has outside directors? A mitigating assumption at this point, is to assume that in most cases, decisions pertaining to board characteristics were made prior to the existence of the interlocking relationship, or the board itself for that matter. Thus, the hypotheses made here with respect to the interaction between board characteristics and the interlocking relationships will be made on the basis of this premise. As such, expect board characteristics such as director *share ownership*, *fraction of insiders*, *outsiders* and *grey directors* on each board, director *option compensation*, and board *tenure*[16] to effect the existence (propensity of) an interlocking relationship within the contents of the shareholder wealth maximization and Agency drivers of interlocks.

[13] Controlling for firm industry is necessary since the majority of the sample firms used (≈ 67%, see table 11) belong to the natural resource industry.
[14] $RelSize = Log(Firm\ MarketCap)/\big(Log(Acq\ Firm\ MarketCap)\big) + \big(log(Target\ Firm\ MarketCap)\big)$
[15] Shareholder Wealth Maximization
[16] Proxied as the time each director has spent serving on the board of directors of each firm

Under shareholder wealth maximization we expect the propensity of interlocks to increase with director ownership, director stock compensation, and tenure thus sginalling director entrenchment into the firms they expect to serve for a significant portion of time. Under the alternate agency, theory, low director ownership, a low proportion of the board compensated with options, and low tenure would indicate that those serving on the board are not as invested in the long term future of the firm. In turn, this could imply that any interlocking directors from such boards are there in order to fulfill the very specific requirements of an agency driven management, where they are serving as interlocking directors simply to cull information pertaining to a potential target by sitting on its board. Once that task is done and the smaller firm is either accepted for purchase or discarded, the interlocking directors, who have no significant ties to the purchased entity, are free to move to other endeavours. In addition, we expect an increase in the propensity of interlocks the greater the fraction of outsiders serving on each board (indicating independent boards), as well as a greater fraction of grey directors indicating that directors serving on interlocking boards have other professional expertise which they bring to the management of the firms they serve – further evidence of the knowledge transfer hypothesis for interlocks. Alternatively, under agency, we expect the fraction of insider directors to positively affect the propensity of interlocks. In summary;

- **H2**: Propensity to Interlock given ***director share ownership***

$$\boldsymbol{P(Interlock) = \alpha + (\beta_1 * Share\ Ownership) + (\beta_2 * Control)}$$

  - **SWM**: Expect sign of β_1 to be positive
  - **Agency:** Expect sign of β_1 to be negative or 0

- **H3:** Propensi**ty** to Interlock given ***stock compensation***

$$\boldsymbol{P(Interlock) = \alpha + (\beta_1 * Stock\ Comp) + (\beta_2 * Control)}$$

  - **SWM**: Expect sign of β_1 to be positive
  - **Agency:** Expect sign of β_1 to be negative or 0

- **H4**: Propensity to Interlock given the directors' ***average tenure***

$$\boldsymbol{P(Interlock) = \alpha + (\beta_1 * Time\ On\ Board) + (\beta_2 * Control)}$$

  - **SWM**: Expect sign of β_1 to be positive
  - **Agency:** Expect sign of β_1 to be negative or 0

- **H5: Propensity** of Interlocks given ***fraction of outside directors***

$$\boldsymbol{P(Interlock) = \alpha + (\beta_1 * Avg\ Outsiders) + (\beta_2 * Control)}$$

  - **SWM**: Expect sign of β_1 to be positive
  - **Agency:** Expect sign of β_1 to be negative or 0

- **H6:** Propensity to Interlock given ***fraction of inside directors***

$$\boldsymbol{P(Interlock) = \alpha + (\beta_1 * Avg\ Insiders) + (\beta_2 * Control)}$$

  - **SWM**: Expect sign of β_1 to be negative
  - **Agency:** Expect sign of β_1 to be positive or 0

- **H7**: Propensity to Interlock given ***fraction of grey directors***

$$\boldsymbol{P(Interlock) = \alpha + (\beta_1 * Avg\ Grey) + (\beta_2 * Control)}$$

  - **SWM**: Expect sign of β_1 to be positive
  - **Agency:** Expect sign of β_1 to be negative or 0

In his 2010 paper "*Breaking the Boardroom Gender Barrier: the Human Capital of Female Corporate Directors*", which also centers' on the topic of the *resource dependency theory*, Paul Dunn reiterates the arguments made in this paper that *linkages*

to other corporations and individuals, and thus access to critical resources and information, is one of the most important tasks (along with giving legitimacy to a firm and providing advice and counsel) attributed directors. In as such, he tests for five "human capital characteristics", *insider, specialist, business manager, generalist, and influential*[17], found in women newly appointed to board of directors. In his sample of 17,169 senior officers of major organizations (14,863 men and 2,306 women) drawn from the *Canada Financial Post Directory of Directors for 2004*, finds that women who are ***business managers*** are "are the most favoured group (32.6%) and insiders the least favoured (8.3% of the sample) of newly included directors. According to Dunn, business managers are;

> ...individuals who are CEOs or senior executives at either public or private for-profit firms...[who] provide expertise on competition, decision making and problem solving within the business milieu...[and] through their links with other firms, these directors also become important external communication channels (5)

Hillman et al. (2007) also argue that female directors have the potential to link their firms, to different constituencies than their male counter parts, and as such we expect the average number of women to be positive under ***SWM*** and zero or negative under ***Agency***.

- **H8**: Propensity to Interlock given ***fraction of women directors***

$$\boldsymbol{P(Interlock) = \alpha + (\beta_1 * Avg\ Women\ ) + (\beta_2 * Control)}$$

  - **SWM**: Expect sign of β_1 to be positive
  - **Agency:** Expect sign of β_1 to be negative or 0

[17] ***Insider*** is a director who is the founder, related to the founder, or is an executive of the firm. ***Specialist*** is a director who is a professional banker, lawyer, government bureaucrat or public relations specialist. ***Business manager*** is a director who is a CEO or a manager at either a public or a private for-profit firm. ***Generalist*** is a management consultant or a corporate director. ***Influential*** is a woman who works for a university, non-profit organization, hospital or medical facility, philanthropic organization, cultural organization or is a recognized community leader

To summarize *hypotheses 1-8* above, their conjectures are presented below in tabular form. Each variable discussed in these hypotheses will be listed, followed by its predicted sign under both the agency and shareholder wealth maximization drivers of interlocks.

	Predicted Sign Under	
Variable	***SWM***	***Agency***
Firm-Specific Characteristics		
• Firm Size	-	+
Board-Specific Characteristics		
• Director Share Ownership	+	- / 0
• Stock Compensation	+	- / 0
• Average Tenure	+	- / 0
• Fraction of Outside Directors	+	- / 0
• Fraction of Inside Directors	-	+ / 0
• Fraction of Grey Directors	+	- / 0
• Fraction of Women Directors	+	- / 0

At this point, the firm and / or board-specific characteristics from the above table that are found to most significantly predict the likelihood of observing an interlock will be aggregated into one general likelihood expression along with control variables for firm size[18], and industry[19], in order to model the *overall* likelihood of an interlocking relationship. This equation will take the following form, for $\boldsymbol{X_n}$ number of significant variables used to predict the likelihood of an interlock;

$$\boldsymbol{P(Interlock) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n}$$

Next, we will apply the model above to each firm's data in order to calculate the likelihood[20] of observing an interlock on the board of each firm. This result will then be

[18] The variable ***ln_mrktcap***, which is equal to the natural logarithm of each firm's market capitalization
[19] The dummy variable ***NatRes***, which takes on a value of 1 when a firm operates within the natural resources industry and 0 otherwise
[20] This likelihood ratio should be unique to each firm, since each firm has a unique combination of firm and board-specific characteristics

used in determining whether the likelihood of an interlock has an affect on any of the following ***deal-specific characteristics***; *Deal Status, Deal Escalation, Contestation, Hostility, Toehold, Percentage Toehold*, *Premium*, and *Method of Payment* (*Cash*, *Stock or Mix)*[21]. We expect this aggregate interlocking relationship to be a significant determinant of these deal-specific characteristics, because it will incorporate many of the key elements that are associated with / motivate the existence of interlocks.

For example, when analysing the likelihood of observing a successful deal, the model $\boldsymbol{P(Deal\ Status) = \alpha + \beta_1 P(Interlock)}$ will be used, and the significance of the *P(Interlock)* variable will be noted. This process will then be repeated for each of the aforementioned deal characteristics. It is important to note that because control variables for firms size, and industry have already been incorporated into the model that yielded the *P(interlock)* value, no further control variables will be used when analysing the likelihood of each deal characteristic. For robustness purposes, this process will be repeated using the ***observed*** interlock[22], as the independent variable rather than the *likelihood* value calculated earlier. As such, when modeling likelihood of any of the deal characteristics mentioned, the control variables for firm size and industry will be incorporated into the model along with the observed interlock variable. Therefore, using deal status as an example once more, the model will now take on the form $\boldsymbol{P(Deal\ Status) = \alpha + \beta_1(Interlock) + \beta_2\big(Ln(Market\ Cap)\big) + \beta_3(NatRes)}$.

We expect that deals among interlocking firms whose relationship is known (or rumoured) to be motivated by wealth maximization incentives, will ***not*** exhibit higher rates of *success* than deals without an interlocking relationship. The reason for this logic

[21] See ***Table 4*** for a definition of all variables used

[22] ***Observed Interlock*** is a dummy variable that takes on the value of 1 when an interlock is observed between merging firms and 0 otherwise

is, stems for the notion that if the interlocking relationship is driven by mutual gains on both sides, there is no reason to expect the target firm to simply "roll-over" and accept a bid from its interlock partner. In fact, we feel that if the offer is not suitable, that target firm's management can and should, in the best interest of the firm's shareholders, reject the offer. On the other hand, the market will fully expect the successful completion of deals between firms whose relationship was known (or rumoured) to be driven by agency incentive, because in essence the successful completion of a merger between the two firms is precisely the objected of the interlock (i.e. this has been the point of the interlock all along). In the same breath, instances of negotiation *escalation*, *deal contestation*, and *hostility* for deals with agency driven interlocks should be significantly lower than other deals, because we expect that bidder and target management to have communicated their intentions to merge to each other before a formal bid announcement is made. ***Escalation*** is defined in this paper as the situation when the initial bidder deal is rejected (for any reason), and negotiation between bidder and target commence. Escalation is proxied by any announcement that a target firm's management has rejected an initial offer proposed for their firm. Escalation does not pre-empt hostility; escalation can simply be a call to renegotiate the deal terms, whereas ***deal contestation*** is defined as the participation of a rival bidding firm (as a white knight or otherwise as a rival bidder), and lastly, ***hostility*** represents the situation when the initial bidder deal is rejected (for any reason), and target management makes an announcement that the bidder's offer is not welcome and take any action available to it, such as proxy-fights, reverse purchases etc. in order to defend itself against this unwanted bid. Hostility is also delineated by acrimonious exchange of communication between target and acquiring firms within the press.

Conversely, deals with wealth maximization driven interlocks should not exhibit significantly more (or less) instances of escalation, deal contestation, and / or hostility than another other deals. It is important to note at this point that, when analysing the various deal-characteristics, those that take on 1 / 0 values (such *deal status*, *hostility* etc.) will be regressed using *Logit* regression, whereas those that are continuous variables (such as the *premium paid*, and the *percentage toehold*) will be regressed using the *OLS* model.

Given the models and arguments presented above, *hypothesis 9-16* below present our expectations for the likelihood of each deal characteristic given the likelihood of observing an interlocking relationship within any firm in our sample;

H9: Propensity of ***successful*** deal completion given the likelihood of an interlock

$$\boldsymbol{P(DealStatus) = \alpha + \beta_1 P(Interlock)}$$

- **SWM**: Expect sign of β_1 to be 0
- **Agency:** Expect sign of β_1 to be positive

- **H10:** Propensity of ***escalation*** in negotiations given the likelihood of an interlock

$$\boldsymbol{P(Escalation) = \alpha + \beta_1 P(Interlock)}$$

- **SWM**: Expect sign of β_1 to be 0
- **Agency:** Expect sign of β_1 to be negative

- **H11:** Propensity of the deal being ***contested*** given the likelihood of an interlock

$$\boldsymbol{P(Contestation) = \alpha + \beta_1 P(Interlock)}$$

- **SWM**: Expect sign of β_1 to be 0
- **Agency:** Expect sign of β_1 to be negative

- **H12:** Propensity of ***hostility*** given the likelihood of an interlock

$$\boldsymbol{P(Hostility) = \alpha + \beta_1 P(Interlock)}$$

  - **SWM**: Expect sign of β_1 to be 0
  - **Agency:** Expect sign of β_1 to be negative

It is important to note that *hypotheses 10-12* involved mechanisms which the management of target firms can employ in an attempt to gain as much value for their firm as possible during a takeover / merger, or to fend off un-welcomed proposals to merge. We do not expect the management of target firms to use these mechanisms when they are subject of takeover attempts by firms with which they are interlocked under agency driven incentives.

With respect to pre-deal ownership of target firms, deals among all interlocking firms should exhibit significantly higher frequency of *toeholds*[23] among the participants, as well as higher *fraction of toehold ownership*, i.e. the bidding firm should own more of the target than it would otherwise own if the interlocking relationship did not exists. The reason for this is twofold; assuming that the interlocking relationship is motivated by *wealth maximization* drivers, larger firms, who thanks to the interlocked director now know more about their smaller (target) counterparts, are likely invest in the smaller firms and thus assure themselves the prolongation of the relationship and its benefits, as well as to keep away potential rivals looking to purchase the smaller firm. Alternatively, if agency drivers are what motivated the interlock, larger toeholds are expected in compliance with the management empire-building desires, as discussed earlier. As such, this is why instances of toeholds and higher fractions of toeholds are hypothesised to be

[23] ***Toehold*** is defined here as one firm owning <u>any</u> value > 0% of the other.

greater among interlocking firms, regardless of what motivated the firms to interlock. Formally;

- **H13:** Propensity of the existence ***toehold*** given the likelihood of an interlock

$$\boldsymbol{P(Toehold) = \alpha + \beta_1 P(Interlock)}$$

  - **SWM**: Expect sign of β_1 to be positive
  - **Agency:** Expect sign of β_1 to be positive

- **H14:** The average obser$_v$ed ***fraction of toehold*** given the likelihood of an interlock

$$\boldsymbol{\%Toehold = \alpha + \beta_1 P(Interlock)}$$

  - **SWM**: Expect sign of β_1 to be positive
  - **Agency:** Expect sign of β_1 to be positive

With respect to bid premium, it is expected that deals between interlocking firms whose relationship is based on wealth maximization drivers will not exhibit significantly different premiums than non-interlocking deals, whereas deals between interlocking firms whose relationship is known (or rumoured) to be based on agency driven incentives should exhibit premiums that are larger than non-interlocking deals. Due to the fact that the interlock relationship affords each firm the opportunity to know more about the other than otherwise would have been possible, the target firms (in all cases) should have little or no opportunity to mask their true value in hopes of negotiating a higher purchase premium. Effectively, the target firms' bargaining power is greatly diminished by virtue of the interlock. This however, does not necessarily mean that the bidding firms will pay a bid premium that is less than those paid in non-interlocking deals. Bidding firms who underpay will risk a variety of consequences that may include, but not limited to, the

target firm rejecting the offer (and the relationship) and choosing to remain independent, the target firm seeking out a white knight, and / or the appearance of a rival bidder, and even the threat of legal action by target shareholders. Failure of the bidding firm to obtain the target will, in essence, mean that the target firm (or a successful rival) will obtain any and all benefits, i.e. any knowledge and / or support the target firm garnered from its interlocking relationship, transferred from the bidding firm to the target firm during the course of their interlocking relationship. Since bidding firms will not want this to occur, they will probably pay a premium to the target that is commensurate with those paid by other non-interlocked bidding firms. As such, we expect the bid premiums in deals with wealth maximization-based interlocks to be no different than those without a similar relationship.

The premium argument, however, should be different for agency-based interlocks. Given that the interlocking relationship between the two firms was created to in order to achieve one firm's management's personal agenda – the only possible way to convince the other firm's management and shareholders to agree to the plan is to sweeten the deal at the time of purchase. This however does not mean that the interlocking bidding firm will pay as high a premium as a non-interlocking bidder; the interlocking relationship will prevent that from occurring. In fact, given agency drivers for the interlock, we expect to observe the premiums paid by interlocking bidders to be significantly higher than interlocking bidders whose interlock with the target were based on wealth maximization drivers, and less than those paid by bidders who do not have an interlock. Thus, the agency driven interlock benefits both participating by allowing the target firm

to earn some premium, but saves the bidding firm some of the premium it would have otherwise paid out had it not developed that relationship with the target.

Once again, using an OLS regression;

- **H15:** The average observed ***premium*** given the likelihood of an interlock

$$\boldsymbol{Premium = \alpha + \beta_1 P(Interlock)}$$

  - **SWM**: Expect sign of β_1 to be 0
  - **Agency:** Expect sign of β_1 to be positive

Lastly, with regards to the method of payment chosen between the two parties, an earlier paper on this subject by Betton, Nawfal, and Paeglis (2007) suggested the following four theories to explain the implied message sent to the market via the choice of payment method in an M&A deal with respect to the topic of interlocking directorates:

• **Scenario I:** No interlock, bidder offers stock. In this situation the asymmetric information arises on both the bidder and the target sides of the transaction. The bidder offers stock, the value of which the target does not know; and in return, the bidder receives a target which cannot be valued exactly. This scenario is referred to as the base case.

• **Scenario II**: No interlock, the bidder offers cash. Here, the overall asymmetry of information between the two firms is reduced due to the revelation of the true value of the bidder's offer to the target. While there is no doubt about the value of the consideration target will receive, the "true" value of the target remains uncertain, due to the asymmetric information about the value of the target's assets in their current use as well as the uncertainty about the synergies generated by the merger.

• **Scenario III**: Interlock exists, bidder offers stock. Markets should perceive this transaction as the riskiest type since the bidder offers stock despite having an interlocking

board with the target and thereby more information about the true stand-alone value of the target. By still choosing to offer stock the bidder signals its wish to share the potential downside risk with target's shareholders suggesting that there remains a great deal of uncertainty about the value of the potential synergy gains.

• **Scenario IV**: Interlock exists, bidder offers cash. The asymmetry of information between the bidder and target is reduced and the bidder is confident of the true value of the target's assets in their current use. There remains only the uncertainty about the value of the synergies to be generated by the merger. The choice of cash as the medium of exchange sends the strongest signal about the confidence of bidder's management in their estimate of the synergy

As such, it is hypothesised that because the acquirer shareholders know (or are relatively assured) the true value of the target firm, and that, reciprocally, the target shareholders know (or are relatively assured) the true value of the bidding firm's offer, then there should be significantly more instances of cash being used among interlocking deals then otherwise would have been observed. Formally;

- **H16:** Propensity of payment in ***cash***, given the likelihood of an interlock

$$\boldsymbol{P(Cash) = \alpha + \beta_1 P(Interlock)}$$

  - **SWM**: Expect sign of β_1 to be positive
  - **Agency:** Expect sign of β_1 to be negative or 0

In addition, and by extension of *hypothesis 16*, the propensity using either stock or mixed payment methods, given the likelihood of an interlock, are expected to be negative or 0 for deals involving interlocks motivated by shareholder wealth maximization incentives and positive for instances where the interlocking relationship is motivated by agency.

To summarize *hypotheses 9-16* above, their conjectures are presented below in tabular form. Each variable discussed in these hypotheses will be listed, followed by the predicted sign of the *likelihood of an interlock* as their explanatory variable for said under both the agency and shareholder wealth maximization drivers of interlocks.

	Predicted Sign of P(Interlock) under	
Variable	***SWM***	***Agency***
Deal-Specific Characteristics		
• Deal Status	0	+
• Deal Escalation	0	-
• Contestation	0	-
• Hostility	0	-
• Toehold	+	+
• %Toehold	+	+
• Premium	0	+
• Cash	+	- / 0
• Stock or Mix	-	+ / 0

Turning to the main topic of deal returns; interlocking directorates can have a positive, negative, or no effect on shareholder (target and bidder) wealth. Since, as argued previously, interlocks can be formed when smaller firms seek out directors of larger firms to sit on their board in order to benefit from the knowledge, experience and connections said individuals hold, interlocks can have a *positive effect* on both (future) target and acquirer firms. Due to the existence of this joint relationship, the interlocked firms will become more knowledgeable of each other than otherwise would have been possible, and as such the smaller firms will gain access to more professional and knowledgeable directors and acquiring firms will gain access to a potential future acquisition targets. Target firms' shareholders will accept this relationship if they believe (or it is their intent) that the firm will be sold in the future. Thus, in order to better assure

the success of their firms until such time, the target shareholders will accept the interlock with a larger firm, giving them access to knowledge and expertise which should help them better compete in the market place. The market, realizing this, will reward target shareholders for their strategic thinking in the form of higher returns relative their non-interlocking counterparts, at the announcement of the interlock[24]. The market should also reward the larger firms' shareholders for their strategic thinking of linking up with future potential targets; however, given the hypothesised difference in size between interlocking pairs, this effect may not be significantly measurable.

Alternatively, the interlocking relationship could have *no effect* on the value of either target or bidder firms. Market participants may, for example, deem that due to its size, the large firm will extract cooperation from the smaller firm due to the latter's need for the former's director(s). Seeing no value creation in the possible coercion practiced by the larger firms, markets will not reward these entities with higher valuations. Taking the perspective of the smaller firms, although market participants may accept that larger firms will try and force cooperation of their smaller interlocks because of their size, they may likewise conclude that that smaller firms can take advantage of the relationship and still retain some of their independence. This is because in the small firms' favour is the salient risk that their larger interlock partner cannot force complete cooperation for fear that a rival large firm will make a more generous bid for their small interlocks and thus put any and all investments (including knowledge) the large interlock partner made in the smaller firms at risk. Thus, the with the benefits to each firm cancelling out the other, firm value for both firms in an interlocking relationship can remain unchanged.

[24] Given the ***knowledge transfer theory***, interlocking target firms, hypothesised to be smaller, will have access to knowledge and resources of a much larger firm, as this access to a valuable resource (information) should lead to higher valuations for interlocked target firm versus comparable firm without such access.

Lastly, interlocks can have an entirely *negative effect* on both firms' value. Market participants may deem that although the interlock between larger firms and smaller ones will indeed result in a transfer of knowledge between the two, it is the smaller firms that will benefit most from this relationship because they will essentially leech onto the larger firms, and by virtue of having access to the larger firms' board members and making demands on their time and efforts, the smaller firms will simultaneously deprive the larger firms from enjoying the full benefits that these individuals provide to their management. In addition, the market may fear that, in their pursuit of a potential future target – perhaps motivated by management agency drivers such as empire building – larger firms will give their smaller interlocks access to market experience, proprietary knowledge, as well as financial and / or material resources without accepting equitable compensation due to the smaller firms' lack of wealth at the start of the relationship. Alternatively, interlocks may be deemed detrimental for smaller (future target) firms by the market if the benefits of the interlock look to be sequestered mainly by the larger firm. Larger firms, may use their size to appropriate unique expertise / knowledge gained by smaller (perhaps more nimble and innovative) firm, and thus the interlocking relationship becomes simply a mechanism with which larger firms can achieve access to firms with proven innovative techniques / knowledge, and thereby reduce the amount of risk they are exposed to when conducting M&A transactions with firm with whom they had a very limited (or no) relationship prior to the bid. As quoted earlier by Penning (1983), interlocks are a less radical solution to knowledge acquisition than a merger and / or acquisition, and thus larger firms should tend to use this mechanism more often, since it is a lot cheaper and easier to implement than purchasing

another firm outright, in order to remain innovative and fresh. Another possibility, is that the market may punish both firms simultaneously, if it is deemed that the interlock is nothing but a manifestation of the *class hegemony* theory, whereby the interlock only exists to serve the need of a particular directors (or directors), and is driven by personal pursuits of power or social status rather that based on solid business fundamentals. Finally, the threat of legal repercussions brought up against the interlocked firms is always a possibility, if it is determined that the interlocking relationship is effectively a merger[25]. These legal consequences would, of course, lead to lower valuation for both firms, to adjust for value lost during litigation as well as any penalties that must be paid, and / or restructuring required to be made in order to comply with the law.

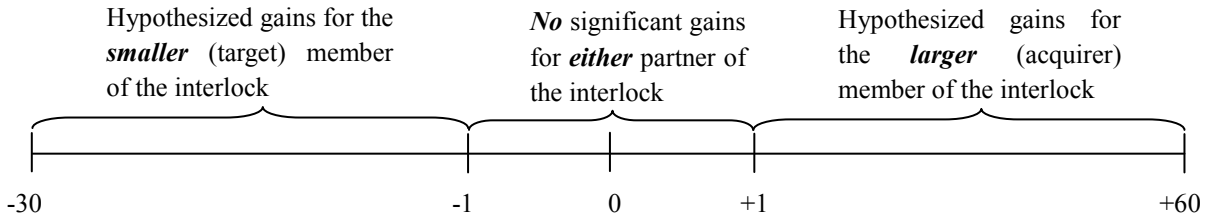
However, based on the literature cited previously, and with respect to this paper, the benefits of the interlocks should outweigh their drawbacks. Thus we expect that the interlocking relationship will yield positive value for both the target and acquirer firm. We believe that the benefits of an interlocks should also not be exclusively enjoyed by one party alone; otherwise the interlocking relationship will not exist in the first place if either of the parties feels that they will be at a disadvantage with the interlock in place. After all, the creation of an interlock is a mutually consensual choice between two entities, and thus must be equitable to both or it would not exist. Smaller firms cannot force larger firms to allow their directors the option of working on other boards, and likewise larger firms cannot force smaller firms to accept individuals onto their board whom they do not wish to include. Both firms will know that it is inevitable that information will travel between them via the interlocking director, and thus both will agree to the relationship only if there is something to be gained for each of them.

[25] See page 10 detailing Canada's Competition Act

In addition to expecting positive returns to both participants in a merger between interlocks, we also expect this value creation to take on a *unique* profile in contrast to the one often observed the literature. Whereas it is common to observe the target's price rise to reflect the bid and premium on announcement day, and the acquire price to fall slightly or remain unchanged, we expect that an interlocking target will see its stock price, and by extension its cumulative abnormal returns, to rise in the period before the announcement of a bid i.e. during the life of the interlock. Whether the interlock is motivated by agency or value creation, we expect the target price to rise because in the case of agency, target shareholders can expect a bid premium on announcement of the merger and to a lesser extent some support / expertise from the larger firm during the life of the interlock. In the case of value creation, target shareholders will see their holdings appreciate as their firm works with the larger firm and secures access to knowledge and needed resources. Thus with the acceptance of the interlock, the small firms' management is exchanging any future bargaining power, for some immediate increase in their valuation as well as the opportunity to learn from and work with a bigger more established firm.

Inversely, for the bidding firms, we expect the benefits of the interlocking relationship to manifest themselves after any bid announcement. This is because due to the already existing relationship between the two, as argued earlier, the likelihood that the bidding firm did not over pay will be higher, as will the likelihood of synergies between the two merging firms. No significant gains should be made by either firm on the announcement day of the bid, since the interlocking relationship should be well known to market participants, who in turn would find no surprise in a merger announcement between the two firms. In essence, the interlocking relationship will yield a different

return structure than that normally observed during standard M&A activity where the bidder is observed to make negative abnormal returns on the day of and following the merger announcement, and the target firm show significantly positive gains on the day of and following the merger announcement. These gains (positive and negative) are driven by the surprise element of one firm making a bid (hostile or otherwise) to purchase another , whereas the gains made by firms within an interlocking relationship should not be driven by surprise, but rather from value creating cooperation between two entities who chose to work together consensually. The figure below illustrates the hypothesised effects on the firms' returns during in the 30 [26]days before the announcement of the merger deal between the interlocking firms (day 0), the 3 days surrounding the deal announcement (-1,+1), and 60 days after the deal announcement (days 0 to 60).



For each of the time periods specified in the diagram above, the *Cumulative Abnormal Returns* (CARs) of Acquirers, Targets, and Portfolios for each of the thee windows discussed, (-30, -1,), (-1, 1), (0, 60), will be obtained using the standard event-study methodology a la Brown and Warner (1985). The estimation window will take on duration of 250 days, and the number of observations within that time span will be no less than 100 in order to ensure that any thinly trade stocks are eliminated from the calculation procedure.

[26] Although the effects of the interlock on the abnormal returns of both the future target and bidder firms should be most significant on and around the announcement of the interlocks, our hypothesise studies the effects of the interlock 30 days before the announcement of the bid in order to capture the relationship between the interlock and deal anticipation.

Next, the cumulative abnormal returns will be regressed using a linear OLS against the main predictive variable, the *likelihood* of an interlock between two firms discussed earlier and presented as $\boldsymbol{P(Interlock) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n}$. This variable, as discussed, represents the calculated value of the *propensity*, or likelihood, of observing an interlocking relationship based on the most significant firm and board characteristics previously discussed and presented in *hypotheses 1-8*. In addition to the likelihood of interlock ratio, control variables for *relative size* and *method of payment*[27] will be incorporated into each regression. For robustness, the Cumulative Abnormal Returns (CARs) will also be analyzed using ***observed*** (rather than predicted) interlock in this scenario the equation will be $\boldsymbol{Interlock = \alpha + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n}$, where *interlock* is a dummy variable that takes on a value of 1 for an observed interlock and 0 otherwise.

In addition to testing for the effects of the propensity of having and interlocking relationships, the propensity of a "surprise" relationship, or lack thereof, was calculated and tested, for robustness purposes. A surprise interlocking relationship, or its absence, is defined as the actual status of between two firms (0 if no interlocking relationship exists or 1 if there is an interlocking relationship) minus the predicted likelihood of an interlock between two firms. Testing for the surprise occurrence of interlocks is meant to pick up the market's response to a merger announcement between firms expected to have interlocks but are revealed not to have one, and / or between firms which are not expected to have an interlock and are discovered to have such a relationship between them.

[27] Because we will be analysing each firms CARs over both pre and post bid announcement windows, the *method of payment* variable will not be included in the CARs regressions that pertain to pre-announcement time since during that period no bid had been made and thus no method of payment exists since no payment has been made.

V. Sample and Data Collection

The sample used in this study was compiled using three separate sources; the Securities Data Corp (SDC) Database, the Financial Post (FP) FP-Infomart Mergers Database, and Bureau Van Dijk's Zephyr M&A Database. Regardless of the data source used, the basic premise followed throughout the data collection process was to collect the following: all Canadian merger and / or acquisition deals announced between 1997 and 2003 inclusively, for publicly traded firms and excluding all deals involving financial firms[28] (target or bidder firms). In addition all deal forms listed either as share buyback or acquisition of assets, were excluded, as well as any deals for which the target and / or the acquirer is listed as a public administration, telecommunication, or utility firm, as well as any deals where the acquiring firm effectively had control of the target, measured as a toehold greater than 50% of the target's shares outstanding. The choice of date range was to incorporate two objectives: obtain director data and be able to examine long run post acquisition performance. The Canadian System for Electronic Document Analysis and Retrieval (SEDAR) was used to obtain proxy data. Since this data source's repository begins in 1997, that year served as the lower limit of our data range. 2003 was chosen as the upper end of the data spectrum to allow for at least five years to pass after the last deal in order for the newly merged firm to publish accounting and performance data which will be used to expand the scope of this study in future paper(s)

Given the above criteria, the SDC database yielded a total of 613 transactions, 4,394 deals were obtained for the FP-Infomart, and Zephyr provided an additional 1,021 viable deals after the removal of 109 deals which were missing either Acquirer or Target data.

[28] These types of firms were removed because the analysis of financial firm M&A is structurally different than that of other firms.

However, before beginning work on this amalgamated dataset, a thorough matching process was conducted between the various data sources in order to eliminate the inevitable overlaps in content. ***Table 1*** details the breakdown of the overlapping of content in matrix form. Not surprisingly, due to the fact that the Zephyr is the most recently created of the three used the number of overlaps with this data source increase as we move forward in time. ***Table 2*** provides these overlaps by the year in which the deal occurred and ***Table 3*** illustrates the distribution of interlocking deals among bidders and targets over the seven year time span of this paper's data. After identifying all overlapping observations, the remaining sample was then matched to the Canadian Financial Markets Research Center (CFMRC) database to identify publically traded bidders and targets. In addition, because thin trading is often a limiting factor when working with Canadian data, this process helped eliminate all deals for which the deal participants did not have any documented market returns.

Due to the use of three separate data sources, the variables of interest for each deal were not consistently found across all sources. As such, the decision was made to build a mini-database containing the deal information[29] for all transactions identified. For this task, the Factiva and ProQuest databases where used to research news articles (news wire) announcing each deal, which were subsequently used to collect the necessary details for each transaction. A total of 10 deals were eliminated during this process due to the lack of information. ***Table 5***, ***Table 6***, and ***Table 7*** report the summary statistics that characterize the firms within the sample, board attributes, and deal characteristics respectively; for all three tables, ***panel A*** breaks down the calculated statistics between interlocking and non-interlocking firms, whereas ***panel B*** repeats the process between

[29] The list of variables for which information was collected is provided in ***Table 4***

bidders and targets. As a general trend, most deals, 88%, tended to be successful, with the highest rates of success occurring in 2001 after which the success rate declined slightly. Deals characterized by escalation of bidding, hostility, and / or contestability accounted for only 14%, 11%, and 10% of all bids respectively over the 6 year period of this study. Finally, the method of payment across deals was approximately equally divided among the cash, stock, or mixed payments.

The last step taken before analyzing the data for this paper was to collect each firm's director data. This step called for the creation of another mini database since no formal data source provided the required set of variables for this study. A list of these variables and their description, as mentioned previously in footnote, is provided in ***Table 4***. All director information was collected manually using company proxy statements filed with System for Electronic Document Analysis and Retrieval (SEDAR) as the main data source. In the case when electronic proxies could not be located, the Blue Book of Canadian Business (1976-present) was used as a complementary second source of director information. ***Table 8*** details the breakdown of the director data sources and their uses. As ***Table 8*** shows, the director information for both deal participants was obtained from the same data source for about 82% of the usable deals, i.e. deals where at least one participant's information was found. As per ***Table 8***, 8 deals were eliminated during this process due the lack of director information available for both participants. At the end of this information gathering process, a total of 353 firms (consisting of 124 unique acquirers, and 151 unique targets) were left creating a total of 220 deals.

As a consequence of using a non-electronic data source, the proxy filings with SEDAR and the published material in the CCB, there is an inevitable difference between

each deal's news wire announcement date and the date of the director information used. As such, only director data, from either source, published *before* the announcement date of each deal was used. ***Table 9*** presents these date differences, grouped by the year in which each deal was announced and by participant (acquirer or target). Over the 6 year span of the data sample of this study, the average difference, or lag, between the acquirer and target firms' director data and the announcement of the merger and / or acquisition deal they were involved in was about 147 days, or about 5 months for the acquiring firms, and about 200 days, or about 6 $^{2}/_{3}$ months, for target firms. The classification of this paper's sample is summarized in ***Table 10*** which breaks down the distributions of interlocking and non-interlocking firms among both targets and acquirers, and ***Table 11*** which orders the sample firms into their respective industry of operation.

VI. Results

This section presents the results of testing the various hypotheses presented earlier. In addition, this section also presents some general findings discovered while studying paper's thesis pertaining to the Canadian M&A environment. First, a general observation to note is the distribution of merger and / or acquisition activity in the years sampled in this thesis. ***Table 3***, as mentioned previously, presents the distribution of the sample data by the year in which each deal was announced. As ***Table 3*** shows, the number of merger and acquisition deals announced peaked in 2000, and dropped off sharply thereafter. Understandably, the timing of the drop of in merger activity in Canada coincided with the start of the 2001 recession period in the United States, as illustrated in ***Figure 1***. This is a poignant reflection of the impact that the U.S. economy has on Canadian capital markets,

despite the fact that all the deals in this particular sample are not cross border transactions but rather exclusively between Canadian firms.

Another significant characteristic of Canadian M&A presented by ***Table 3***, is the steadily rising proportion of deals in which the two parties have an interlocking relationship. Overall, interlocking deals made up close to 19% of all merger deals in this paper's sample. Assuming that this paper's sample is a fair representation of the overall merger activity in Canada, nearly a third, as of 2003, of all merger deals in Canada have some interlocking or overlapping of board members. The argument could be made that these results are because the Canadian pool of qualified directors is small, thus firms have a smaller number of qualified directors from which to choose and as such interlocks are an inevitable consequence. However, firms are not obligated to hire board directors from within their home nation. Of the 353 firms in the current sample, only 103 of them had boards composed entirely of Canadian directors[30, 31]. According to the research of Fama and Jensen, the role of outside directors can be summarized as follows;

- They are professional referees whose task is to stimulate and oversee the competition among the firm's top management (Fama, 1980, p. 293).
- They carry out tasks that involve serious agency problems between internal managers and residual claimants' (Fama and Jensen, 1983, p. 315).
- They supply relevant complementary knowledge...to provide an important support function to the top managers in dealing with specialized decision problems' (Fama and Jensen, 1983, p. 315)

[30] Directors are designated as Canadian or Other based on their place of domicile as per company proxy statements filed with the Electronic Document Analysis and Retrieval (SEDAR)
[31] Only 5 firms had a board of directors composed exclusively of foreign nationals

Therefore, given the above benefits of outside directors coupled with the fact that firms are not obligated to hire from within their home country, the argument that Canadian firms should have more interlocking directors due to the fact that there is small pool of qualified Canadian directors is not a valid argument for the presence of this proportion of interlocks among Canadian boards[32]. Thus this lends strength to the notion that not all directors are selected solely on the basis that their professional background / experience will be a beneficial and / or complimentary addition to a firm's board. If that were the case, firms should hire directors from across the globe[33] in order to meet any predetermined experience / knowledge quotas they have set for their board and eschew the hiring of directors whom are also presiding on other firms' boards.

The rest of this section will be organized as follows; first, results of hypotheses and general findings pertaining to firm and board characteristics will be discussed, followed by a similar section dedicated to deal characteristics. Lastly, results of hypotheses made for deal and portfolio returns will be presented and discussed.

i. Firm and Board Characteristics

First, ***Table 5*** presents the univariate results for the test in the difference in firm size between interlocks and non-interlocks, ***Panel A***, as well as Acquirer and Target firms, ***Panel B***. Results show that on average, non-interlocking acquiring firms are not significantly larger than their interlocking counter parts in either measure of firm size, the natural logarithm of firm market capitalization or relative size. Alternatively, non-interlocking target firms tend to be significantly larger (at 1%) than their interlocking

[32] To the best knowledge of this author, no other paper documents the percentage of interlocks, historically or otherwise, present in the Canadian markets.
[33] Board meetings conducted over conference calls are an efficient and relatively cheap way of mitigating the costs associated with hiring directors from other nations.

counterparts as measured by their size relative to their acquiring firm. This result gives credence to hypothesis presented earlier that interlocks should be more prevalent among the smallest of firms, who would be motivated to seek such a relationship in order to build a knowledge transfer network with larger more experienced firms in the market. ***Panel B's*** results are consistent with M&A literature, and show that acquiring firms are significantly larger than their targets regardless of whether they have an interlocking relationship with their targets or not.

Testing for *Hypothesis 1* (H1), which speculated that the propensity of having and interlock will be negatively affected by firm size under the wealth maximization driver of interlocks and positively affected by firm size under the agency driver of interlocks, ***Table 12***'s Logit results in fact show that the propensity to interlock increase significantly (at the 5% level) the smaller the firm size. This is strong evidence in favour of the wealth maximization driver of interlocks, which argues that smaller firms are more likely form links with directors of larger firms in order to gain the experience and knowledge these top managers have gained in order to use this knowledge to better compete (and thus increase their shareholder's wealth) in a market place where their size leaves them at a distinct competitive disadvantage. These results confirm those found by Haunschild and Beckman (1998) showing that the effects of interlocks often are most profound for the smaller, rather than the larger of the interlocking pairs. As such, smaller firms –i.e. usually the targets – tend to have more interlocks than their larger acquirers

Next, ***Table 6*** presents the univariate results for the test in the difference of means of various board characteristics between interlocks and non-interlocks, ***Panel A***, as well as Acquirer and Target firms, ***Panel B***. First, the difference between the fraction

interlocking and non-interlocking board made up of local (i.e. Canadian) directors is not significant, indicating that the fraction interlocking and non-interlocking firms' boards made up of local directors is approximately the same. This result is also true when this test is conducted between acquirer and target firms rather than interlocks versus non-interlocks. These results are interesting because assuming that the larger the firm[34] the more resources it should have at its disposal to search for, locate, and convince top executives to join its board, then the significantly larger Acquiring firms (see ***Table 5***) should have a higher percentage of their board represented by foreign directors – assuming their objective is to hire the best.

Coincidentally, ***Table 6*** provides more interesting information about the makeup of Canadian boards and sheds some light as to the reason behind who is chosen to take up these positions. On average, Canadian target firms have the same percentage of their board made up of outside, inside, and grey directors [35] as their acquiring counterparts; however target firms that ***do*** have an interlocking directorship (***Panel A)*** have a significantly larger percentage their board made up of outside and grey directors.

These results, coupled with the results in ***Table 6*** showing that the significantly smaller target firms on average compensate their directors *no less* than the much larger acquiring firms, in terms of annual retainers and meeting fees, suggests that small Canadian firms' choice of interlocks is focused on attracting not just any director with knowledge and expertise, or even connections to a large and powerful firm, but rather a director with knowledge and social connections specific to Canada. Furthermore, and lending further support to *Hypothesis 1*, ***Panel C Table 6*** shows that overall, interlocking

[34] Proxied here as the natural log of market capitalization in Canadian dollars
[35] A grey director is defined as a director with a past relationship with the firm, i.e. past executive, employee etc.

target firms have a higher proportion of their boards made up of interlocking directors relative to their acquirers. This difference is significant at the 10% level.

Continuing with ***Table 6 panel E***, univariate results show that acquiring firms, compared to target firms, predictably, have larger boards, with the difference being significant at the 1% level. On average, acquiring firms have approximately 8 people on their boards compared to approximately 7 for target firms. Between non-interlocking acquirers and targets, the difference in board size is significant at the 1% level, whereas between interlocking acquirers and targets the difference is observed to be significant at the 5% level. In addition, ***panel*** D of the same table clearly shows that interlocking targets have significantly more (at the 10% level) board members than non-interlocking targets. This result is consistent with the results of ***Panel C***, in that it explains how interlocking firms have a significantly higher proportion of their boards made up of interlocking directors. The higher percentage is due to the hiring of additional directors, most or all of whom are directors of other firms.

With respect to the number of women present on Canadian boards, there is no statistical difference between the percentage of women present on the boards of targets (3.60%) and acquirers (4.15%), with the overall sample average being 3.89%. This relationship holds between interlocking and non-interlocking acquirer and target pairs. However, when comparing all interlocking targets versus all non-interlocking targets, ***Table 6 panel A*** shows that interlocking targets have about 7% of their board seats occupied by women compared to just 3% for target firms that do not have interlocking directorates; a difference that is significant at the 1% level. This suggests that, perhaps, the additional number of directors that interlocking targets have in comparison to non-

interlocking targets (as per the results of ***Panel D***) are mainly composed of female directors. It is worthwhile to note that the percentage of women found serving the board of directors of Canadian firms is much lower than the % value quoted by the Catalyst's[36] 2007 edition of the "*Catalysts Canada Census of Women Corporate Officers and Top Earners of Canada*". Of the 353 firms in the current sample, 260 (≈74%) of them had no women on their board, 87 (≈24.65%) had one woman among their board members, and only 6 (≈0.02%) had more than two women serving on their boards; these values are different than the one reported by Catalysts', which were 43.2%, 28.2%, and 28.6% respectively. Catalysts' values, however, were calculated only from among Financial Post 500 (FP500) companies, whereas this paper's sample is non-discriminatory and thus included firms across Canada, regardless of size.

Table 6 also sheds light on the tenure of Canadian directors. Although ***panel B*** of ***Table 6*** shows no difference in director tenure between acquirers and targets (both about 6 ½ years), there is a significant difference in the time directors spend on the board of an interlocking acquirers versus a non-interlocking acquirer. Directors serving on the boards of acquirer firms with interlocking directorates appear to be more entrenched, spending on average about 8 years on the board versus only 6 for directors on the board of acquiring firms with no interlocking directorships; a difference that is significant at the 1% level. Conversely this difference in tenure does not exist between interlocking and non-interlocking target boards. This appears to provide further support for the wealth maximization driver of interlocks; in order to gain access to experience and information,

[36] Catalyst, founded in 1962, is a leading non-profit membership organization working globally with businesses and the professions to build inclusive workplaces and expand opportunities for women and business." (www.catalyst.org)

smaller Canadian firms tend to target outside, but local, directors to occupy seats on their boards – these directors are often long tenured board members of much larger firms that eventually become interested in acquiring the smaller firms on which their entrenched directors also serve (interlocked directors). This proposition supports both the aforementioned ***financial health / resource dependency*** theory, which argues that firms' main goal is to acquire the resources, be they raw materials or financial, necessary for survival, as well as the ***knowledge transfer theory***.

Lastly, ***Table 6*** shows that there is no difference in the average proportion of outside, inside, or grey directors between interlocked and non-interlocked acquiring firms. This situation is duplicated with respect to interlocking and non-interlocking acquiring firms, save one difference; interlocking acquiring firms have a significantly higher proportion (at 1%) of grey directors serving on their boards than non-interlocking acquirers. As presented in *Hypothesis 6* earlier, a higher proportion of grey directors is indicative of the wealth maximization driver of interlocking relationships in M&A.

Given the univariate observations from ***Table 6***, and *Hypotheses 2-8* expressed previously, ***Table 13*** addresses each of those hypothesis in order to determine which underlying theory, agency or wealth maximization, is the one the most likely drives the creation of interlocking boards in Canadian merger partners. Once again, as in ***Table 12***, the regressions presented in this table are Logit regressions, where *Interlock* is a 1 or 0 variable representing whether a *portfolio*[37] made up of the merger pair has an interlocking relationship or not. In total, 119 portfolios were created; consisting of complete data (stock return and board information) for both firms. Of these 119 portfolios (each

[37]Recall that in order to find the joint effect of the interlocking relationship; portfolios were created for each merger pair, with the weight of each firm in the portfolio equal to the natural logarithm of its market capitalization relative to the natural logarithm of both firms' market capitalization together.

representing one deal), 24 of them were between firms that had an interlocking relationship with each other. With respect to *Hypothesis 2* and *3*, regressions 1 and 2 in ***Table 13*** shows that the percentage of direct voting shares owned by directors and the percentage of the board that is compensated with options, have no significant impact on the propensity of a merger pair having an interlocking relationship between them. As hypothesized earlier, a significantly negative or non-significant coefficients for either of these variables is indicative of the agency driver of interlocks[38]. Regressions 3, 6, and 7 of this table shows the predicted signs for board member *tenure,* proportion of *grey directors*, and proportion of *female directors* respectively, as the ones predicted to be observed in the scenario that interlocks are driven by shareholder wealth maximization incentives rather than management agency. Longer tenured boards, a large proportion of grey directors, and a larger proportion of women is shown to significantly increase the propensity to interlock between the two merging firms. The proportion of inside directors, regression 5, was found to have no effect on the propensity to interlock between firms, and this result is inconsistent with both the wealth maximization and agency theories. Lastly, the fraction of outside directors was found to negatively affect the propensity of observing an interlock between firms, and this is consistent with the predicted sign in *Hypothesis 5* under the agency driver of interlocks. However, when all the variables with significant coefficients are combined into one regression, regression number 8, to predict the propensity of observing an interlock this variable loses its significance and thus removes an element of support for the agency driver of interlocks.

In summary, ***Table 13*** presented eight Logit regressions to answer the seven hypotheses presented earlier, in order to ascertain which driver behind the creating of

[38] See *hypothesis 2* (H2)

interlocks, agency or wealth maximization, is most likely. The results have shown that the agency theory is supported by the results of *Hypotheses 2* and *3*, whereas the wealth maximization theory is supported by results of *Hypotheses 4, 7,* and *8. Hypothesis 6* supported neither theory, whereas the number of outside directors (*Hypothesis 5)* showed support for the agency theory only when used as the only explanatory variable in the model, but did not show support for either theory when combined within a general Logit regression predicting the propensity to interlock. As such, ***Table 13*** provides a scant edge to the theory that Canadian interlocks are driven primarily by wealth maximization incentives rather than agency ones. As described earlier in the methodology section, the most significant variables predicting interlocks will be combined to form an aggregate equation describing the likelihood of observing an interlock. Through the results of ***Table 13*** the six most significant interlock predictors were grouped into the following equation;

$$P(Interlock) = \alpha + \beta_1\big(Ln(Market\ Cap)\big) + \beta_2(Avg.TOB) + \beta_3(\%\ Outsiders) + \beta_4(\%\ Grey) + \beta_5(\%\ Women) + \beta_6(Nat.Resouce\ Dummy)$$

ii. Deal Characteristics

Table 14a (Panels A-H)[39] detail the results of *Hypotheses 9-16*, and provide convincing evidence for the notion that interlocking directorates in Canada are more likely to be created between firms with wealth maximization intentions rather than agency driven incentives. The Logit regression presented in ***Panel A*** indicates that deals with the propensity of having an interlock are no more successful at being consummated that deals without an interlock, in line with the hypotheses that when an interlock is created on the basis of wealth maximization, there should be no further guarantee that the

[39] For robustness purposes, ***Table 14b*** analyzes the same variables discussed in ***Table 14a***, but uses the observed interlock variable as the primary predictor, rather than the likelihood of an interlock (please see earlier Hypothesis & Methodology Section for details). Results, presented in this table are similar to those found above in ***Table 14a***

two firms will eventually consummate their relationship formally. In support of this finding, the results of the Logit regressions in ***Panel B, C,*** and ***D*** show that the propensity of observing deal escalation, deal contests, and hostility between the firms is as likely in deals with interlocks as in deals without interlocks. These results run counter to *hypotheses 10, 11,* and *12* which argued that when a deal is announced between interlocking firms whose relationship was known (or rumoured) to be based on agency motives that such negative aspects of the merger process will be suppressed since there should already be an "understanding" between the management of both firms.

Consistent with the predictions of *hypotheses 13* and *14* the propensity of observing a toehold among interlocks is significantly (at 1%) greater than among deals without an interlock (***Panel E***), and the expected value of the fraction of toehold held by the acquiring firms is also significantly greater (also at 1%) than would otherwise be observed with deals without an interlocking relationship between the merging parties (***Panel F***). As per ***Panel F***, on average, acquiring firms that have an interlocking relationship with their targets own approximately 23% share of those targets before the merger announcement. This ownership value is larger than the 20% average reported by Betton, Eckbo, and Thorburn (2007). However, it is important to note that of the 119 portfolios used, only 14 (11.76%) deals were such that the acquiring firm held a toehold within the target. This ratio is comparable to the 13% value reported by Betton, Eckbo, and Thorburn (2007). Among portfolios (deals) with an interlocking relationship, the ratio of those that own a toe hold is 10/24 or approximately 42%. From the above data, we see that toeholds are infrequent in the general takeover world but are very frequent (and large) when there is an interlocking board.

Panel G presents the OLS regression for the expected bid premium given the propensity of an interlock between the two merging firms. As predicted in the wealth maximization scenario for interlocks in *hypothesis 15*, the expected bid premium among deals with interlocks is not significantly different from those without such a relationship. This lends credence to the argument that the management of target firms with a wealth maximizing interlocking relationship still retain the choice of rejecting a bid from its interlocked partner if such a bid undervalued the firm.

Lastly, ***Panels H Table 14a*** present the Logit regression for the propensity of bid payments being made in cash, given the likelihood of an interlock between the merging firms. The results of these regressions also confirm the wealth maximization arguments made in *Hypotheses 16* which argues that because the interlocking relationship allows the bidding firm to learn more about its target, and thus its true value, then cash bids should be more likely. ***Panel H*** indeed shows that given the propensity to interlock, cash bids are significantly more likely (at 1%).

iii. Deal and Portfolio Returns

To finally answer the main hypothesis of this paper; do mergers between interlocking firms result in higher returns for investors, the results of ***Tables 19*** and ***20*** indicate that indeed, mergers among interlocking firms yield positive returns.. Over a 60 day window, deals among interlocking firms returned an average of 8% more (significant at 5%) than comparable non-interlocking firms based on calculations of cumulative abnormal returns (CAR) and 13% more than non-interlocking firms based on buy and hold (BHAR) calculations.

Tables 21a to ***23a***[40] address the theories postulated in section IV, wherein it was proposed that, for a period before the announcement date (-30,-1), the *propensity* of having an interlocking relationship between two independent firms, will have a significantly positive effect on Target firms' returns – as investors price in the benefits of the Target firms' invitations of directors from bigger, more resource and network rich firms, to sit on their boards. In addition, it was proposed that for the period around the announcement day (-1, 1) the difference in returns between interlocking Acquirers and Targets should not be significantly different than 0, because the market should not be surprised by a merger announcement from among such firms since their interlocking relationship was announced to the market prior to the merger announcement. Lastly, interlocking Acquirer firms should exhibit significantly positive returns in comparison to their Target after the merger announcement (proxied in this paper by a [0, +60] day window) presumably because they succeeded in acquiring firms with whom they are familiar and thus avoided overpaying for their purchase.

The results of ***Tables 21a*** to ***23a*** do not completely support all the theories postulated in section IV. ***Table 21a*** for example shows that 30 days before a merger announcement, the propensity to interlocking relationship had no significant impact on Acquirer or Portfolio returns, but had significantly (at 1%) negative returns on Target returns. Alternatively, Portfolio returns seem to be positively (at 5% significance) related to the propensity of a surprising interlock one month before any merger announcement; ***Table 22a*** shows similar results. However, ***Tables 23a***, which tests for Acquirer, Target and

[40] For robustness purposes, ***Tables 21b-23b*** presents analyzes the same variables discussed in ***Tables 21a-23a***, but used the observed interlock variable as the primary predictor, rather than the likelihood of an interlock (please see earlier Hypothesis & Methodology Section for details). Results, presented in this table are similar to those found above in ***Tables 21a-23a***

Portfolio returns for the two months after the announcement of any merger deals between the firms, shows that Portfolio returns were positively and significantly (at 5%) effected by the propensity to interlock between the two merging firms, with the propensity of a surprise interlock having no effect on the Portfolio returns over the same period.

VII. Discussion and Recommendations

This paper, drawing its sample from among Canadian mergers and acquisitions activity from 1997-2003, addressed the question of whether the existence of an interlocking relationship, defined as the situation in which two firms share one or more board members, has any effect on the performance of acquirers, targets, or both in the specific event of a merger between them.

The paper began by introducing some of the most prominent literature on the topic of interlocks, namely the work focusing on the inter-organizational and intra-class analysis of this phenomenon. Further research was also presented on why interlocks exist, within the context of the ***Inter-Organizational*** and ***Intra-Class*** analysis. Two drivers for the existence of interlocks, ***Management Agency*** and ***Shareholder Wealth Maximization***, were discussed, as well as their underlying attributes, being firm size, management control, and class hegemony in the case of the *Agency* theory, and firm size, financial health / resource dependency, and knowledge transfer needs in the case of the S*hareholder Wealth Maximization* argument. In addition, the most prominent legislative acts governing interlocks in Canada as well as in the United States (Canada's largest trading partner) were introduced and their relevance to this paper's thesis was discussed.

The results of this paper, which also included general findings on the state of boards in Canada, showed that interlocking relationships have been on the rise in Canada since

the turn of the new century, with the latest data showing nearly 20% of all Canadian firms having an interlocking relationship as represented by a shared director on their board. It was also found that, on average, interlocking acquiring firms tend to have significantly longer tenured board members than non-interlocking acquirers, whereas interlocking targets have a significantly higher percentage of women and grey directors on their, as well as a higher number of large shareholders. In addition, although there was no significant difference in the number of directors on interlocking and non-interlocking acquiring firms' board, these boards were always larger than their target counterparts. However, among targets, interlocking firms had significantly larger boards, suggesting that the difference could be the interlocking board member – added to the already established board in order for the target firm to benefit from his / her experience and social connectivity. With respect to deal characteristics, interlocking deals were found to be likely to succeed, have a higher frequency and level of toeholds, use cash more frequently, and have significantly lower rates of deal contestation in comparison to their non-interlocking counterparts.

In testing this paper's main thesis, it was found that the propensity of having an interlocking relationship between any two firms was negatively related to firm size, and positively related to board member tenure, their relationship to the firms (insider and grey), as well as their gender (women). These attributes were used to develop an aggregate probably of interlocks among firms, which in turn was used to explain deal characteristics such as success rates, method of payment, deal attitude, and bid premium. The propensity to interlock was found to be a significant variable in explaining deal status, the observation of toeholds among the merging parties, the percentage of toehold

owned by the acquiring firm prior to biding for the target, as well as the choice of using cash as a payment method. Continuing to use this aggregate likelihood of observing an interlock, evidence from the cumulative abnormal returns, as well as buy-and-hold returns, of portfolios created from the stocks of the merged firms indicated that over the approximately two months following the announcement of a merger deal between two Canadian firms, those that had an interlocking relationship before the announcement performed significantly better (between 11% and 13%), than the firms which did not have such a relationship between their boards.

Based on these results, it appears that the interlocking board phenomenon is something that is valued among market participants, even though it is often regarded with a degree of mistrust by lawmakers and others. The reservations against interlocking boards stem from the argument that interlocking boards can be misused to the detriment of shareholders as a whole. This argument, however, can be applied to many other characteristics of corporate governance. However, since interlocking boards do provide benefits to shareholders, it would be in the interest of those shareholders to monitor their designated boards' action when such a relationship occurs.

The topic of mergers between interlocking firms will undoubtedly benefit from further research for two crucial reasons; one, in order to examine many of the preconceived notions of insider manipulation and agency many have when confronted with this subject, and second, to learn more about the mechanics behind these kinds of relationship in order to better utilize them to the benefit of shareholders. With respect to this paper, its findings have the potential to be expanded and generalized by expanding the sample size of interlocking mergers studies as well as by investigating the performance of mergers

among interlocked firms in various other countries. In addition, researching the behaviour of stock price run-up and mark-up with respect to deal consisting of interlocking target and acquirer firms is another avenue of research worth considering, as well as that which studies the long-run performance of the merged interlocks relative to merged firms who were not interlock before their combination.

Tables

***Table* 1**: Sample Deals – Source Overlaps

	SDC	Zephyr	FP
SDC	612	.	.
Zephyr	97	1130	.
FP	284	196	4394

***Table* 2**: Sample Deals – Breakdown by Year and Source

	SDC Zephyr Overlaps	SDC FP Overlaps	FP Zephyr Overlaps
1997	2	48	0
1998	1	42	2
1999	2	54	2
2000	6	49	14
2001	28	43	49
2002	35	33	69
2003	23	15	60
Total	**97**	**284**	**196**

***Table* 3**: Deal Distribution by Year

Year	Non-Interlocks			Interlocks			Total	
	N	% of All Non-Interlocks	% of Year's Sample	N	% All Interlocks	% of Year's Sample	N	%
1997	44	15.28%	91.67%	4	6.15%	8.33%	48	13.60%
1998	36	12.50%	83.72%	7	10.77%	16.28%	43	12.18%
1999	48	16.67%	81.36%	11	16.92%	18.64%	59	16.71%
2000	59	20.49%	86.76%	9	13.85%	13.24%	68	19.26%
2001	50	17.36%	79.37%	13	20.00%	20.63%	63	17.85%
2002	29	10.07%	69.05%	13	20.00%	30.95%	42	11.90%
2003	22	7.64%	73.33%	8	12.31%	26.67%	30	8.50%
Total	288	100.00%	81.59%	65	100.00%	18.41%	353	100.00%

***Table* 4**: Variable Descriptions

Variables	Description	
Panel A: Firm Characteristics		
natres	0= Natural Resource Firm	0 = Otherwise
mrktcap_min31	Firm Market Capitalization (CA$)	
ln_mrktcap	Natural Log of Firm Market Capitalization	
relsize	Firm Relative Size	
Panel B: Deal Characteristics		
dateannou(nw)	Announcement Date (New Wire data)	
yr1997 Dummy	Year 1997 = 1	0 = Otherwise
yr1998 Dummy	Year 1998 = 1	0 = Otherwise
yr1999 Dummy	Year 1999 = 1	0 = Otherwise
yr2000 Dummy	Year 2000 = 1	0 = Otherwise
yr2001 Dummy	Year 2001 = 1	0 = Otherwise
yr2002 Dummy	Year 2002 = 1	0 = Otherwise
yr2003 Dummy	Year 2003 = 1	0 = Otherwise
dealstatus	Completed Deal = 1	0 = Otherwise
stock	Stock Deal = 1	0 = Otherwise
cash	Cash Deal = 1	0 = Otherwise
mix	Mixed Payment Deal = 1	0 = Otherwise
prctcash	% of Deal Paid In Cash	
prctstock	% of Deal Paid In Stock	
prctsought	% of Target Sought	
toehold	Toehold = 1	0 = Otherwise
prcttoehold	Percent Toehold Existing	
prctafterdeal	% of Target Owned After the Deal	
p/s	Event Day Price per Share (CA$)	
dealvalue$CA	Deal Value (CA$)	
debt$CA	Deal Debt (CA$)	
dealvalue+debt$CA	Total Deal Value (CA$)	
support	Deal Supported by Target = 1	0 = Otherwise
escalation	Escalation In Negotiation = 1	0 = Otherwise
hostile	Hostile Bid = 1	0 = Otherwise
contested	Contested Bid = 1	0 = Otherwise
price_ed	Event Day Price (CA$)	
price_min31	Firm Price on Day -31 (CA$)	
premium	Premium Paid (Percent)	
diversified	Merger / Acq. Across Industries = 1	0 = Otherwise
Panel C: Board Characteristics		
acq/tar	Acquirer = 0	Target = 1
totaldirectors	Total Number of Directors on Board	
women	Women On Board = 1	0 = Otherwise
avgwomen	Average Number of Women on Board (Percent)	
total1stdegree	1st Degree Connection = 1	0 = Otherwise
total2nddegree	2nd Degree Connection = 1	0 = Otherwise
interlock	Interlock = 1	0 = Otherwise
avgca	Average Number of Canadians On Board (Percent)	
allca	All Canadian Board =1	0 = Otherwise

avgother	Average Number of Foreigners On Board (Percent)	
allother	All Foreigner Board = 1	0 = Otherwise
mixedb	Mixed Board = 1	0 = Otherwise
avgnumpos	Average Number of Board Members Currently Employed By the Firm	
avgaudit	Average Number of Directors on the Audit Committee	
avgcomp	Average Number of Directors on the Compensation Committee	
avgnomgov	Average Number of Directors on the Nominating & Governance Committee	
avgcommperdir	Average Number of Committee Spots Occupied Per Director	
ceochair	CEO = Chair =1 Otherwise = 0	
avginsiders	Average Number of Inside Directors	
avgoutsiders	Average Number of Outside Directors	
avggrey	Average Number of Grey Directors	
avgtimeonboard	Average Time Spent On the Board (Years)	
%-mvod	% of Multiple Voting Shares Outstanding - Directly Held By Board Members	
%-mvoid	% of Multiple Voting Shares Outstanding - Indirectly Held By Board Members	
%-vod	% of Voting Shares Outstanding - Directly Held By Board Members	
%-void	% of Voting Shares Outstanding - Indirectly Held By Board Members	
%-nonvod	% of Non Voting Shares Outstanding - Directly Held By Board Members	
%-nonvoid	% of Non Voting Shares Outstanding - Indirectly Held By Board Members	
avg retainer	Average Retainer	
avg meetfee	Average Meeting Fee	
meetfeeprctofret	Meeting Fee as a % of Retainer	
prctw/stockcomp	% of Board With Stock Compensation	
total ps	Total Number of Principle Shareholders	
%-ps-mvod	% of Multiple Voting Shares Outstanding - Directly Held By Principle Shareholders	
%-ps-vod	% of Voting Shares Outstanding - Directly Held By Principle Shareholders	
%-ps-nonvod	% of Non Voting Shares Outstanding - Directly Held By Principle Shareholders	

***Table* 5**: Sample Variables Descriptive Statistics – Firm Characteristics

Panel A: Interlocks vs. Non-Interlocks

	Non-Interlock		Interlock		Difference
	N	**Mean**	**N**	**Mean**	**Non-Inter. - Interlock**
Acquirers					
Mrktcap	137	$3,940,000,000	34	$1,080,000,000	$2,860,000,000
RelSize	103	4.45	26	22.07	-17.62
Targets					
Mrktcap	125	$185,000,000	30	$400,000,000	-$216,000,000
RelSize	100	1.24	23	0.62	0.61***

Panel B: Acquirers vs. Targets

	Acquirers		Targets		Difference
	N	**Mean**	**N**	**Mean**	**Acquirers - Targets**
Non-Interlocks					
Mrktcap	137	$3,940,000,000	125	$185,000,000	$3,760,000,000*
RelSize	103	4.45	100	1.24	3.21**
Interlocks					
Mrktcap	34	$1,080,000,000	30	$400,000,000	$681,000,000**
RelSize	26	22.07	23	0.62	21.45

***Table* 6**: Sample Variables Descriptive Statistics – Board Characteristics

Panel A: Interlocks vs. Non-Interlocks

	Non-Interlock		Interlock		Difference
	N	**Mean**	**N**	**Mean**	**Non-Inter. - Interlock**
Acquirers					
% Women	151	0.04	34	0.05	-0.01
% CAs	85	0.83	17	0.85	-0.02
% Others	85	0.14	17	0.15	0.00
% Insiders	147	0.26	34	0.23	0.03
% Outsiders	140	0.62	34	0.62	0.00
% Grey	138	0.14	34	0.15	-0.02
Avg. TOB[41]	131	6.19	34	8.31	-2.12***
Director Ownership	133	0.09	34	0.09	0.00
Avg. Retainer	133	$10,052	34	$9,828	$224
Avg. Meeting Fee	133	$589	34	$1,051	-$463
% w/ Stock	128	0.76	34	0.72	0.05
# of PS[42]	154	0.65	34	0.85	-0.20
PS Ownership	63	0.33	18	0.25	0.08
Targets					
% Women	131	0.03	31	0.07	-0.04***
% CAs	88	0.86	19	0.91	0.87
% Others	88	0.12	19	0.08	0.04
% Insiders	130	0.25	30	0.22	0.02
% Outsiders	124	0.64	30	0.54	0.10**
% Grey	124	0.10	30	0.24	-0.14***
Avg. TOB[43]	123	6.51	29	6.06	0.45
Director Ownership	122	0.10	30	0.12	-0.02
Avg. Retainer	123	$5,446	30	$5,915	-$470
Avg. Meeting Fee	123	$414	30	$557	-$142
% w/ Stock	122	0.74	30	0.68	0.07
# of PS[44]	134	0.87	31	1.23	-0.36**
PS Ownership	69	0.37	26	0.33	0.04

[41] Time on Board: The average time (in years) a director has spent serving on a particular board.
[42] Principle Shareholders: Shareholders who own more than 5% of each respective firm.

Panel B: Acquirers vs. Targets

	Acquirers		Targets		Difference
	N	**Mean**	**N**	**Mean**	**Acquirers-Targets**
Non-Interlocks					
% Women	151	0.04	131	0.03	0.01
% CAs	85	0.83	88	0.86	-0.03
% Others	85	0.14	88	0.12	0.03
% Insiders	147	0.26	130	0.25	0.02
% Outsiders	147	0.26	130	0.25	0.02
% Grey	138	0.14	124	0.10	0.04
Avg. TOB[43]	131	6.19	123	6.51	-0.32
Director Ownership	133	0.09	122	0.10	-0.01
Avg. Retainer	133	$10,052	123	$5,446	$4,607
Avg. Meeting Fee	133	$589	123	$414	$174
% w/ Stock	128	0.76	122	0.74	0.02
# of PS[44]	154	0.65	134	0.87	-0.22
PS Ownership	63	0.33	69	0.37	-0.04
Interlocks					
% Women	34	0.05	31	0.07	-0.02
% CAs	17	0.85	19	0.91	-0.05
% Others	17	0.15	19	0.08	0.07
% Insiders	34	0.23	30	0.22	0.01
% Outsiders	34	0.23	30	0.22	0.01
% Grey	34	0.15	30	0.24	-0.09
Avg. TOB[43]	34	8.31	29	6.06	2.25
Director Ownership	34	0.09	30	0.12	-0.03
Avg. Retainer	34	$9,828	30	$5,915	$3,912
Avg. Meeting Fee	34	$1,051	30	$557	$495
% w/ Stock	34	0.72	30	0.68	0.04
# of PS[44]	34	0.85	31	1.23	-0.37
PS Ownership	18	0.25	26	0.33	-0.08

Panel C: Average Interlocks Acquirers vs. Targets

	Acquirers		Targets		Difference
	N	Mean	N	Mean	Acquirers-Targets
Interlocks					
% Interlocks	34	0.13	31	0.18	-0.05*
Full Sample[43]					
% Interlocks	185	0.02	162	0.03	-0.01

Panel D: Interlocks vs. Non-Interlocks

	Non-Interlock		Interlock		Difference
	N	Mean	N	Mean	Non-Inter. - Interlock
Acquirers					
Board Size	151	7.75	34	8.71	-0.95
Targets					
Board Size	131	6.84	31	7.03	-0.19*

Panel E: Acquirers vs. Targets

	Acquirers		Targets		Difference
	N	Mean	N	Mean	Acquirers-Targets
Non-Interlocks					
Board Size	151	7.75	131	6.84	0.92***
Interlocks					
Board Size	34	8.71	31	7.03	1.67**
Full Sample[45]					
Board Size	185	7.93	162	6.88	1.05***

[43] Although the Full Sample count of acquirer and target firms should be equal, the lack of information for some target firms resulted in a divergence between the total number of target and acquire firms.

***Table* 7**: Sample Variables Descriptive Statistics – Deal Characteristics

Panel A: Interlocks vs. Non-Interlocks

	Non-Interlock		Interlock		Difference
	N	**Mean**	**N**	**Mean**	**Non-Inter. - Interlock**
Acquirers					
Deal Status	154	0.87	34	1.00	-0.13***
Stock	154	0.32	34	0.29	0.02
Cash	154	0.35	34	0.44	-0.09
Mix	154	0.32	34	0.26	0.06
% Sought	154	0.73	34	0.68	0.05
Toehold	153	0.06	34	0.47	-0.41***
% Toehold	154	0.01	34	0.14	-0.13***
% After the Deal	154	0.74	34	0.82	-0.08
Deal Value	48	$288,000,000	7	$1,190,000,000	-$900,000,000
Deal Debt	50	$107,000,000	7	$372,000,000	-$265,000,000
Deal & Debt	147	$301,000,000	31	$454,000,000	-$153,000,000
Supported	154	0.87	34	0.88	-0.01
Escalation	154	0.12	34	0.12	0.01
Hostile	154	0.10	34	0.12	-0.02
Contested	154	0.11	34	0.03	0.08**
Premium	100	0.36	25	0.72	-0.36
Diversified	154	0.18	34	0.24	-0.05
Target					
Deal Status	134	0.84	31	0.97	-0.12***
Stock	134	0.34	31	0.23	0.12
Cash	134	0.26	31	0.48	-0.22**
Mix	134	0.38	31	0.29	0.09
% Sought	134	0.77	31	0.68	0.09
Toehold	132	0.05	31	0.45	-0.41***
% Toehold	134	0.00	31	0.14	-0.14**
% After the Deal	134	0.78	31	0.83	-0.05
Deal Value	48	$300,000,000	7	$1,190,000,000	-$889,000,000
Deal Debt	49	$106,000,000	7	$372,000,000	-$266,000,000
Deal & Debt	128	$290,000,000	30	$455,000,000	-$165,000,000
Supported	133	0.85	31	0.84	0.01
Escalation	133	0.14	31	0.16	-0.03
Hostile	133	0.11	31	0.13	-0.02
Contested	133	0.12	31	0.00	0.12***
Premium	107	0.44	29	0.66	-0.22
Diversified	134	0.18	31	0.26	-0.08

Panel B: Acquirers vs. Targets

	Acquirers		Targets		Difference
	N	**Mean**	**N**	**Mean**	**Acquirers-Targets**
Non-Interlocks					
Deal Status	154	0.87	134	0.84	0.03
Stock	154	0.32	134	0.34	-0.03
Cash	154	0.35	134	0.26	0.09
Mix	154	0.32	134	0.38	-0.06
% Sought	154	0.73	134	0.77	-0.05
Toehold	153	0.06	132	0.05	0.01
% Toehold	154	0.01	134	0.00	0.01
% After the Deal	154	0.74	134	0.78	-0.04
Deal Value	48	$288,000,000	48	$300,000,000	-$11,500,000
Deal Debt	50	$107,000,000	49	$106,000,000	$1,117,306
Deal & Debt	147	$301,000,000	128	$290,000,000	$11,100,000
Supported	154	0.87	133	0.85	0.02
Escalation	154	0.12	133	0.14	-0.01
Hostile	154	0.10	133	0.11	-0.02
Contested	154	0.11	133	0.12	-0.01
Premium	100	0.36	107	0.44	-0.08
Diversified	154	0.18	134	0.18	0.00
Interlocks					
Deal Status	34	1.00	31	0.97	0.03
Stock	34	0.29	31	0.23	0.07
Cash	34	0.44	31	0.48	-0.04
Mix	34	0.26	31	0.29	-0.03
% Sought	34	0.68	31	0.68	0.00
Toehold	34	0.47	31	0.45	0.02
% Toehold	34	0.14	31	0.14	0.00
% After the Deal	34	0.82	31	0.83	-0.01
Deal Value	7	$1,190,000,000	7	$1,190,000,000	$0
Deal Debt	7	$372,000,000	7	$372,000,000	$0
Deal & Debt	31	$454,000,000	30	$455,000,000	-$1,233,567
Supported	34	0.88	31	0.84	0.04
Escalation	34	0.12	31	0.16	-0.04
Hostile	34	0.12	31	0.13	-0.01
Contested	34	0.03	31	0.00	0.03
Premium	25	0.72	29	0.66	0.06
Diversified	34	0.24	31	0.26	-0.02

***Table* 8**: Sample Director Information Source Breakdown

	Acquirer SEDAR	Acquirer CBB	Acquirer No Info	
Target SEDAR	290	20	5	315
Target CBB	7	6	3	16
Target No Info	15	7	0	22
	312	33	8	353

***Table* 9**: Date Difference between Announcement Date and Date of Published Proxy

		Acquirers		**Targets**	
Year		**Non-Interlock**	**Interlock**	**Non-Interlock**	**Interlock**
1997	Obs	41	4	34	4
	Mean	163.37	231.25	155.91	187.25
	Median	174	261	181	221
	Max	361	267	259	281
	St.Dev	97.19	63.75	60.13	121.11
	Min	27	136	59	27
1998	Obs	34	7	35	5
	Mean	153.50	142.57	178.20	159.80
	Median	182	150	179	87
	Max	315	241	426	304
	St.Dev	98.25	83.44	125.25	132.41
	Min	-2	37	3	52
1999	Obs	46	11	46	11
	Mean	143.89	200.82	217.39	274.82
	Median	144	184	196	230
	Max	350	266	626	583
	St.Dev	129.04	51.87	139.56	195.13
	Min	-150	146	7	24
2000	Obs	59	9	56	9
	Mean	126.31	141.11	138.59	155.44
	Median	84	124	100	127
	Max	696	323	390	308
	St.Dev	147.32	112.96	121.42	100.46
	Min	-67	12	-34	34
2001	Obs	48	13	47	13
	Mean	178.83	157.38	248.38	174.23
	Median	207	128	273	111
	Max	351	362	424	328
	St.Dev	122.61	138.65	115.79	134.50
	Min	13	7	5	32
2002	Obs	29	13	29	13
	Mean	127.72	134.15	164.59	275.77
	Median	78	61	189	298
	Max	358	408	404	391
	St.Dev	118.02	151.49	119.66	106.79
	Min	2	0	7	22
2003	Obs	21	8	19	8
	Mean	126.33	198.13	275.37	382.88
	Median	129	226	138	317
	Max	292	244	2022	682
	St.Dev	106.24	74.98	461.05	181.61
	Min	6	21	20	197

Table 10: Interlocking vs. Non-Interlocking Deal Breakdown

	Non-Interlock	Interlock	Total
Acquirer	154	34	188
Target	134	31	165
Total	288	65	353

***Table* 11**: Industry Breakdown

Natural Resources	Financial Services	Food and Beverage	Pharmaceuticals / Medical	Pulp / Paper	Retail	Computer Technology	Other	Total
236	24	11	8	8	9	20	37	353
66.86%	6.80%	3.12%	2.27%	2.27%	2.55%	7.08%	10.48%	100%

- The natural resources category included all firms that operated in the extraction and preparation of natural resources (including forestry) as well as those firms that serviced them
- The financial services category does not include any banks or other financial institution, but rather service company such as income trusts and investment funds
- The pulp and paper category includes all publishers
- The computer technology includes all data and software firms

Table 12: Propensity to Interlock given ***Firm Characteristics***, calculated using Logit regression in the form of $\mathrm{P(Interlock)} = \alpha + \beta_1\big(\mathrm{Ln(Market\ Cap)}\big) + \beta_2(\mathrm{Rel.\ Size}) + \beta_3(\mathrm{Nat.\ Res})$

	(1)
	Interlock
Ln(Market Cap)	-0.232
	(2.26)**
Relative Size	0.017
	(0.73)
Nat. Res Co.	0.368
	(1.07)
Constant	2.745
	(1.46)
Observations	237

Absolute value of z-statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 13: Propensity to Interlock given ***Board Characteristics***, calculated using Logit regression in the form of $\mathrm{P(Interlock)} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots + \beta_n X_n$ for each of the eight regressions.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Interlock	**Interlock**	**Interlock**	**Interlock**	**Interlock**	**Interlock**	**Interlock**	**Interlock**
Ln(Market Cap)	-0.131	-0.148	-0.201	-0.127	-0.165	-0.185	-0.169	-0.226
	(1.35)	(1.58)	(2.02)**	(1.34)	(1.73)*	(1.97)**	(1.82)*	(2.22)**
Director Ownership	1.047							
	(1.05)							
% w/ Stock Comp		-0.561						
		(1.31)						
Avg. TOB			0.134					0.119
			(2.68)***					(2.34)**
% Outsiders				-2.160				-0.356
				(2.37)**				(0.26)
% Insiders					-0.708			
					(0.57)			
% Grey						3.983		3.026
						(3.72)***		(1.95)*
% Women							4.511	3.752
							(2.42)**	(1.82)*
Nat. Res Co.	0.204	0.345	0.192	0.368	0.270	0.363	0.260	0.278
	(0.59)	(1.00)	(0.55)	(1.05)	(0.79)	(1.03)	(0.76)	(0.75)
Constant	0.911	1.741	1.451	2.209	1.813	1.397	1.487	1.562
	(0.50)	(0.98)	(0.80)	(1.23)	(0.97)	(0.81)	(0.86)	(0.84)
Observations	233	227	229	233	236	233	238	229

Absolute value of z-statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 14a: Logit & OLS regression results for ***Select Deal Characteristics*** given the likelihood of an interlocking relationship. The ***dependent*** variable for all models is the ***likelihood*** of an interlock, defined as $\mathrm{P(Interlock)} = \alpha + \beta_1(\mathrm{Ln(Market\ Cap)}) + \beta_2(\mathrm{Avg.\ TOB}) + \beta_3(\%\ \mathrm{Outsiders}) + \beta_4(\%\ \mathrm{Grey}) + \beta_5(\%\ \mathrm{Women}) + \beta_6(\mathrm{Nat.\ Resouce})$. Absolute value of z-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%

Panel A**: **Deal Completion (Logit Regression)

	Deal Status
P(Interlock)	-1.041
	(0.65)
Constant	2.684
	(6.16)***
Observations	229

Panel B**: **Deal Escalation (Logit Regression)

	Escalation
P(Interlock)	-0.133
	(0.10)
Constant	-1.754
	(5.23)***
Observations	229

Panel C**: **Contested Deal (Logit Regression)

	Contested
P(Interlock)	-3.944
	(1.63)
Constant	-1.639
	(3.65)***
Observations	229

Panel D**:**Hostilty (Logit Regression)

	Hostile
P(Interlock)	0.352
	(0.24)
Constant	-2.173
	(5.77)***
Observations	229

Panel E**: **Toehold (Logit Regression)

	Toehold
P(Interlock)	3.934
	(3.17)***
Constant	-2.889
	(7.45)***
Observations	227

Panel F**: **Average Toehold (OLS Regression)

	% Toehold
P(Interlock)	0.228
	(5.96)***
Constant	-0.020
	(2.12)**
Observations	229

Panel G**: **Bid Premium (OLS Regression)

	Premium
P(Interlock)	-0.190
	(0.41)
Constant	0.540
	(4.67)***
Observations	197

Panel H**: **Cash Payment (Logit Regression)

	Cash
Pr(interlock)	5.054
	(4.52)***
Constant	-2.011
	(6.79)***
Observations	229

Table 14b: Logit & OLS regression results for ***Select Deal Characteristics*** given an Interlocking Relationship. The ***dependent*** variable for all models is the ***observed*** interlock, which takes on a value of 1 when an interlock exists between two merging firms and 0 otherwise. Absolute value of z-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%

Panel A**: **Deal Completion (Logit Regression)

	Deal Status
Interlock	-
	-
Ln(Market Cap)	0.308
	(1.93)*
Nat. Res Co.	-0.680
	(1.40)
Constant	-3.341
	(1.14)
Observations	190

Panel B**: **Deal Escalation (Logit Regression)

	Escalation
Interlock	0.209
	(0.46)
Ln(Market Cap)	0.065
	(0.63)
Nat. Res Co.	0.951
	(2.52)**
Constant	-3.456
	(1.76)*
Observations	238

Panel C**: **Contested Deal (Logit Regression)

	Contested
Interlock	-
	-
Ln(Market Cap)	0.205
	(1.58)
Nat. Res Co.	0.600
	(1.24)
Constant	-6.296
	(2.49)**
Observations	190

Panel D**:**Hostilty (Logit Regression)

	Hostile
Interlock	0.638
	(1.34)
Ln(Market Cap)	0.093
	(0.82)
Nat. Res Co.	1.298
	(3.00)***
Constant	-4.618
	(2.08)**
Observations	238

Panel E**: **Toehold (Logit Regression)

	Toehold
Interlock	2.834
	(5.93)***
Ln(Market Cap)	-0.051
	(0.44)
Nat. Res Co.	-0.720
	(1.38)
Constant	-1.972
	(0.89)
Observations	236

Panel F**: **Average Toehold (OLS Regression)

	% Toehold
Interlock	0.113
	(9.57)***
Ln(Market Cap)	-0.000
	(0.03)
Nat. Res Co.	-0.009
	(0.90)
Constant	0.007
	(0.15)
Observations	238

Panel G**: **Bid Premium (OLS Regression)

	Premium
Interlock	0.332
	(2.21)**
Ln(Market Cap)	-0.032
	(0.93)
Nat. Res Co.	-0.105
	(0.80)
Constant	1.068
	(1.60)
Observations	204

Panel H**: **Cash Payment (Logit Regression)

	Cash
Interlock	1.117
	(3.31)***
Ln(Market Cap)	-0.029
	(0.36)
Nat. Res Co.	0.312
	(1.02)
Constant	-0.698
	(0.46)
Observations	238

Table 15 Panel A: Sample Deals' CARs

	Total						Non-Interlock						Interlock					
	Obs	**Mean**	**Median**	**Max**	**St.Dev**	**Min**	**Obs**	**Mean**	**Median**	**Max**	**St.Dev**	**Min**	**Obs**	**Mean**	**Median**	**Max**	**St.Dev**	**Min**
Acquirer																		
[-30,-1]	188	0.02	0.01	0.74	0.16	-0.51	154	0.02	0.01	0.69	0.15	-0.51	34	0.04	0.02	0.74	0.22	-0.29
[-1,+1]	186	-0.01	-0.02	0.26	0.08	-0.28	153	-0.01	-0.02	0.25	0.08	-0.28	33	0.01	0.01	0.26	0.09	-0.22
[0,+60]	188	-0.09	-0.08	1.55	0.30	-1.09	154	-0.10	-0.09	1.55	0.29	-1.09	34	-0.03	0.00	0.51	0.30	-0.95
Target																		
[-30,-1]	165	0.05	0.07	0.82	0.24	-0.78	134	0.05	0.07	0.82	0.23	-0.72	31	0.05	0.11	0.69	0.29	-0.78
[-1,+1]	164	0.16	0.12	1.09	0.21	-0.50	133	0.16	0.12	0.87	0.21	-0.50	31	0.14	0.09	1.09	0.23	-0.17
[0,+60]	165	0.18	0.17	1.59	0.38	-1.12	134	0.18	0.16	1.59	0.34	-0.76	31	0.16	0.17	1.53	0.50	-1.12

Table 15 Panel B: Sample Deals' BHARs

	Total						Non-Interlock						Interlock					
	Obs	**Mean**	**Median**	**Max**	**St.Dev**	**Min**	**Obs**	**Mean**	**Median**	**Max**	**St.Dev**	**Min**	**Obs**	**Mean**	**Median**	**Max**	**St.Dev**	**Min**
Acquirer																		
[-30,-1]	188	0.01	0.00	0.90	0.18	-0.44	154	0.01	-0.01	0.90	0.17	-0.44	34	0.02	0.01	0.79	0.23	-0.36
[-1,+1]	186	-0.01	-0.02	0.27	0.08	-0.27	153	-0.02	-0.02	0.22	0.07	-0.27	33	0.01	0.01	0.27	0.09	-0.22
[0,+60]	188	-0.14	-0.11	1.74	0.33	-1.19	154	-0.15	-0.12	1.74	0.33	-1.19	34	-0.07	-0.06	0.54	0.31	-1.10
Target																		
[-30,-1]	165	0.01	0.03	1.16	0.28	-0.93	134	0.02	0.04	1.16	0.27	-0.93	31	-0.01	-0.02	0.80	0.30	-0.78
[-1,+1]	164	0.16	0.11	1.30	0.22	-0.45	133	0.16	0.12	0.84	0.21	-0.45	31	0.14	0.10	1.30	0.26	-0.26
[0,+60]	165	0.07	0.11	2.13	0.67	-4.43	134	0.08	0.11	1.17	0.57	-4.43	31	0.01	0.09	2.13	0.99	-3.76

Table 16 Panel A: Sample Portfolios' CARs

	Total						Non-Interlock						Interlock					
	Obs	**Mean**	**Median**	**Max**	**St.Dev**	**Min**	**Obs**	**Mean**	**Median**	**Max**	**St.Dev**	**Min**	**Obs**	**Mean**	**Median**	**Max**	**St.Dev**	**Min**
Portfolios																		
[-30,-1]	119	0.02	0.02	0.78	0.18	-0.43	95	0.01	0.02	0.78	0.17	-0.43	24	0.04	0.02	0.70	0.22	-0.26
[-1,+1]	119	0.02	0.02	0.55	0.10	-0.23	95	0.02	0.02	0.55	0.09	-0.23	24	0.03	0.02	0.26	0.10	-0.15
[0,+60]	119	-0.04	-0.02	0.81	0.26	-1.01	95	-0.06	-0.04	0.80	0.25	-1.01	24	0.03	0.01	0.81	0.28	-0.47

Table 16 Panel B*:* Sample Portfolios' BHARs

	Total						Non-Interlock						Interlock					
	Obs	**Mean**	**Median**	**Max**	**St.Dev**	**Min**	**Obs**	**Mean**	**Median**	**Max**	**St.Dev**	**Min**	**Obs**	**Mean**	**Median**	**Max**	**St.Dev**	**Min**
Acquirer																		
[-30,-1]	119	0.02	0.02	0.78	0.18	-0.43	95	0.01	0.02	0.78	0.17	-0.43	24	0.04	0.02	0.70	0.22	-0.26
[-1,+1]	119	0.02	0.02	0.55	0.10	-0.23	95	0.02	0.02	0.55	0.09	-0.23	24	0.03	0.02	0.26	0.10	-0.15
[0,+60]	119	-0.04	-0.02	0.81	0.26	-1.01	95	-0.06	-0.04	0.80	0.25	-1.01	24	0.03	0.01	0.81	0.28	-0.47

Table 17 Panel A: Univariate Analysis of Sample Deals' CARs: ***Interlocks vs. Non-Interlocks***

	Non-Interlock		Interlock		Difference
	N	**Mean**	**N**	**Mean**	**Non-Inter. - Interlock**
Acquirers					
[-30,-1]	154	0.02	34	0.04	-0.02
[-1,+1]	153	-0.01	33	0.01	-0.03
[0,+60]	154	-0.10	34	-0.03	-0.07
Targets					
[-30,-1]	134	0.05	31	0.05	0.00
[-1,+1]	133	0.16	31	0.14	0.02
[0,+60]	134	0.18	31	0.16	0.03

Table 18: Univariate Analysis of Sample Deals' BHARs: ***Interlocks vs. Non-Interlocks***

	Non-Interlock		Interlock		Difference
	N	**Mean**	**N**	**Mean**	**Non-Inter. - Interlock**
Acquirers					
[-30,-1]	154	0.01	34	0.02	-0.01
[-1,+1]	153	-0.02	33	0.01	-0.02
[0,+60]	154	-0.15	34	-0.07	-0.08
Targets					
[-30,-1]	134	0.02	31	-0.01	0.02
[-1,+1]	133	0.16	31	0.14	0.02
[0,+60]	134	0.08	31	0.01	0.07

Tale 19: Univariate Analysis of Sample Portfolios' CARs[44]: ***Interlocks vs. Non-Interlocks***

	Non-Interlock		Interlock		Difference
	N	**Mean**	**N**	**Mean**	**Non-Inter. - Interlock**
Full Sample					
[-30,-1]	190	0.02	48	0.05	-0.04
[-1,+1]	190	0.02	48	0.03	-0.01
[0,+60]	190	-0.03	48	0.05	-0.08**

Table 20: Univariate Analysis of Sample Portfolios' BHARs: ***Interlocks vs. Non-Interlocks***

	Non-Interlock		Interlock		Difference
	N	**Mean**	**N**	**Mean**	**Non-Inter. - Interlock**
Full Sample					
[-30,-1]	190	0.01	48	0.04	-0.03
[-1,+1]	190	0.02	48	0.03	-0.01
[-30,+60]	190	-0.06	48	0.07	-0.13**

[44] **Note**: as each portfolio consists of 2 firms, the number of observations listed is **double** the number of portfolios, thus there is in fact only 95 portfolios whose firms have no interlocks, and 24 portfolios whose firms are interlocked. These values add up to 119 portfolios; equal to the value reported earlier in the Hypothesis & Methodology section.

Table 21a: OLS regression of Acquirer, Target, Portfolio Cumulative Abnormal Returns (CARs & P.CARs) for window (-30,-1). For ***Panels A, C, E*** the model used is $CAR_{-30,-1} = \alpha + \beta_1 P(\text{Interlock}) + \beta_x(\text{Control Variable}_x) + \cdots + \beta_n X_n$, where P(Interlocked) is the calculated ***likelihood*** of an interlock, defined as $P(\text{Interlock}) = \alpha + \beta_1(\text{Ln(Market Cap)}) + \beta_2(\text{Avg. TOB}) + \beta_3(\%\text{ Outsiders}) + \beta_4(\%\text{ Grey}) + \beta_5(\%\text{ Women}) + \beta_6(\text{Nat. Resouce})$. $CAR_{-30,-1} = \alpha + \beta_1 P(\text{Surprise Interlock}) + \beta_x(\text{Control Variable}_x) + \cdots + \beta_n X_n$, for ***panels B, D,*** and ***F*** where P(Surprise Interlock) is equal to the observed interlock (0 or 1) *minus* P(Interlock). Absolute value of z-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%

Panel A: *Acquirer CARs*

	CAR(-30,-1)
P(Interlock)	-0.093
	(0.69)
Relative Size	-0.000
	(0.02)
Constant	0.046
	(1.52)
Observations	114
R-squared	0.00

Panel B: *Acquirer CARs*

	CAR(-30,-1)
P(Surprise Interlock)	0.056
	(1.29)
Relative Size	-0.000
	(0.26)
Constant	0.028
	(1.68)*
Observations	114
R-squared	0.01

Panel C: *Target CARs*

	CAR(-30,-1)
P(Interlock)	-0.523
	(3.63)***
Relative Size	-0.007
	(0.38)
Constant	0.167
	(3.82)***
Observations	114
R-squared	0.11

Panel D: *Target CARs*

	CAR(-30,-1)
P(Surprise Interlock)	0.017
	(0.26)
Relative Size	-0.003
	(0.15)
Constant	0.047
	(1.55)
Observations	114
R-squared	0.00

Panel E: *Portfolio P.CARs*

	P.CAR(-30,-1)
P(Interlock)	-0.101
	(1.28)
Relative Size	-0.000
	(0.00)
Constant	0.043
	(2.20)**
Observations	228
R-squared	0.01

Panel F: *Portfolio P.CARs*

	P.CAR(-30,-1)
P(Surprise Interlock)	0.060
	(2.06)**
Relative Size	-0.000
	(0.27)
Constant	0.023
	(2.09)**
Observations	228
R-squared	0.02

Table 21b: OLS regression of Acquirer, Target, Portfolio Cumulative Abnormal Returns (CARs & P.CARs) for window (-30,-1). For ***Panels A, B, C*** the model used is $\mathrm{CAR}_{-30,-1} = \alpha + \beta_1(\mathrm{Interlock}) + \beta_x(\mathrm{Control\ Variable}_x) + \cdots + \beta_n X_n$, where Interlocked is the ***observed*** interlock, which takes on a value of 1 when an interlock exists between two merging firms and 0 otherwise. Absolute value of z-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%. This table is presented as a robustness check for the results presented in ***Panels A, C, E*** of ***Table 21a***.

Panel A: *Acquirer CARs*

	CAR(-30,-1)
P(Interlock)	0.037
	(0.93)
Ln(Market Cap)	-0.015
	(1.68)*
Relative Size	0.000
	(0.20)
Nat.Res.Co.	-0.011
	(0.34)
Constant	0.318
	(1.81)*
Observations	119
R-squared	0.04

Panel C: *Target CARs*

	CAR(-30,-1)
P(Interlock)	-0.049
	(0.78)
Ln(Market Cap)	0.017
	(0.99)
Relative Size	-0.009
	(0.58)
Nat.Res.Co.	0.010
	(0.19)
Constant	-0.244
	(0.77)
Observations	118
R-squared	0.02

Panel C: *Portfolio P.CARs*

	CAR(-30,-1)
P(Interlock)	0.043
	(1.51)
Ln(Market Cap)	-0.001
	(0.24)
Relative Size	-0.000
	(0.15)
Nat.Res.Co.	-0.010
	(0.43)
Constant	0.047
	(0.40)
Observations	237
R-squared	0.01

Table 22a: OLS regression of Acquirer, Target, Portfolio Cumulative Abnormal Returns (CARs & P.CARs) for window (-1,+1). For ***Panels A, C, E*** the model used is $CAR_{-1,1} = \alpha + \beta_1 P(\text{Interlock}) + \beta_x(\text{Control Variable}_x) + \cdots + \beta_n X_n$, where P(Interlocked) is the calculated ***likelihood*** of an interlock, defined as $P(\text{Interlock}) = \alpha + \beta_1(\text{Ln(Market Cap)}) + \beta_2(\text{Avg. TOB}) + \beta_3(\%\text{ Outsiders}) + \beta_4(\%\text{ Grey}) + \beta_5(\%\text{ Women}) + \beta_6(\text{Nat. Resouce})$. $CAR_{-1,1} = \alpha + \beta_1 P(\text{Surprise Interlock}) + \beta_x(\text{Control Variable}_x) + \cdots + \beta_n X_n$, for ***panels B, D,*** and ***F*** where P(Surprise Interlock) is equal to the observed interlock (0 or 1) *minus* P(Interlock). Absolute value of z-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%

Panel A: *Acquirer CARs*

	(1)	(2)
	CAR(-1,+1)	**CAR(-1,+1)**
P(Interlock)	0.045	0.011
	(0.67)	(0.16)
Relative Size	-0.000	
	(0.66)	
Diversified		0.025
		(1.28)
Cash		0.012
		(0.61)
%Toehold		0.083
		(0.83)
Constant	-0.021	-0.027
	(1.42)	(1.73)*
Observations	113	113
R-squared	0.01	0.03

Panel B: *Acquirer CARs*

	(1)	(2)
	CAR(-1,+1)	**CAR(-1,+1)**
P(Surprise Interlock)	0.032	0.022
	(1.52)	(0.94)
Relative Size	-0.000	
	(0.95)	
Diversified		0.026
		(1.30)
Cash		0.012
		(0.58)
%Toehold		0.040
		(0.37)
Constant	-0.013	-0.024
	(1.58)	(1.72)*
Observations	113	113
R-squared	0.02	0.04

Panel C: *Target CARs*

	(1)	(2)
	CAR(-1,+1)	**CAR(-1,+1)**
P(Interlock)	-0.231	-0.183
	(1.69)*	(1.17)
Relative Size	0.011	
	(0.66)	
Diversified		-0.063
		(1.26)
Cash		-0.015
		(0.31)
%Toehold		-0.198
		(0.74)
Constant	0.198	0.222
	(4.79)***	(5.50)***
Observations	114	115
R-squared	0.03	0.05

Panel D: *Target CARs*

	(1)	(2)
	CAR(-1,+1)	**CAR(-1,+1)**
P(Surprise Interlock)	0.031	0.069
	(0.54)	(1.15)
Relative Size	0.014	
	(0.80)	
Diversified		-0.064
		(1.29)
Cash		-0.0.31
		(0.67)
%Toehold		-0.437
		(1.64)
Constant	0.145	0.194
	(5.31)***	(6.81)***
Observations	114	115
R-squared	0.01	0.05

Panel E: *Portfolio P.CARs*

	(1)	(2)
	P.CAR(-1,+1)	**P.CAR(-1,+1)**
P(Interlock)	0.038	0.062
	(0.84)	(1.22)
Relative Size	-0.000	
	(1.02)	
Diversified		-0.003
		(0.19)
Cash		-0.022
		(1.47)
%Toehold		-0.006
		(0.07)
Constant	0.016	0.017
	(1.40)	(1.39)
Observations	228	229
R-squared	0.01	0.01

Panel F: *Portfolio P.CARs*

	(1)	(2)
	P.CAR(-1,+1)	**P.CAR(-1,+1)**
P(Surprise Interlock)	0.017	0.015
	(0.99)	(0.82)
Relative Size	-0.000	
	(1.16)	
Diversified		-0.003
		(0.21)
Cash		-0.018
		(1.23)
%Toehold		-0.004
		(0.04)
Constant	0.024	0.029
	(3.72)***	(3.29)***
Observations	228	229
R-squared	0.01	0.01

Table 22b: OLS regression of Acquirer, Target, Portfolio Cumulative Abnormal Returns (CARs & P.CARs) for window (-1,+1). For ***Panels A, B C*** the model used is $CAR_{-1,1} = \alpha + \beta_1(\text{Interlock}) + \beta_x(\text{Control Variable}_x) + \cdots + \beta_n X_n$, where Interlocked is the ***observed*** interlock, which takes on a value of 1 when an interlock exists between two merging firms and 0 otherwise. Absolute value of z-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%. This table is presented as a robustness check for the results presented in ***Panels A, C, E*** of ***Table 22a***.

Panel A: *Acquirer CARs*		
	(1)	(2)
	CAR(-1,+1)	**CAR(-1,+1)**
Interlock	0.032	0.023
	(1.62)	(0.97)
Relative Size	-0.000	
	(0.97)	
Diversified		0.026
		(1.35)
Cash		0.013
		(0.72)
%Toehold		0.026
		(0.24)
Constant	-0.018	-0.027
	(2.04)**	(2.53)**
Observations	118	118
R-squared	0.03	0.04

Panel B: *Target CARs*		
	(1)	(2)
	CAR(-1,+1)	**CAR(-1,+1)**
Interlock	-0.002	0.053
	(0.03)	(0.88)
Relative Size	0.002	
	(0.15)	
Diversified		-0.065
		(1.34)
Cash		-0.037
		(0.79)
%Toehold		-0.438
		(1.54)
Constant	0.155	0.182
	(5.38)***	(6.52)***
Observations	118	119
R-squared	0.00	0.04

Panel C: *Portfolio P.CARs*		
	(1)	(2)
	CAR(-1,+1)	**CAR(-1,+1)**
Interlock	0.019	0.023
	(1.19)	(1.23)
Relative Size	-0.000	
	(1.19)	
Diversified		-0.002
		(0.13)
Cash		-0.018
		(1.27)
%Toehold		-0.036
		(0.41)
Constant	0.021	0.026
	(3.08)***	(3.02)***
Observations	237	238
R-squared	0.01	0.01

Table 23a: OLS regression of Acquirer, Target, Portfolio Cumulative Abnormal Returns (CARs & P.CARs) for window (0,+60). For ***Panels A, C, E*** the model used is $CAR_{0,60} = \alpha + \beta_1 P(\text{Interlock}) + \beta_x(\text{Control Variable}_x) + \cdots + \beta_n X_n$, where P(Interlocked) is the calculated ***likelihood*** of an interlock, defined as $P(\text{Interlock}) = \alpha + \beta_1(\text{Ln(Market Cap)}) + \beta_2(\text{Avg. TOB}) + \beta_3(\%\text{ Outsiders}) + \beta_4(\%\text{ Grey}) + \beta_5(\%\text{ Women}) + \beta_6(\text{Nat. Resouce})$. $CAR_{0,60} = \alpha + \beta_1 P(\text{Surprise Interlock}) + \beta_x(\text{Control Variable}_x) + \cdots + \beta_n X_n$, for ***panels B, D,*** and ***F*** where P(Surprise Interlock) is equal to the observed interlock (0 or 1) *minus* P(Interlock). Absolute value of z-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%

Panel A: *Acquirer CARs*

	(1)	(2)
	CAR(0,+60)	**CAR(0,+60)**
P(Interlock)	0.230	0.137
	(1.22)	(0.66)
Relative Size	-0.000	
	(0.32)	
Diversified		0.011
		(0.20)
Cash		0.026
		(0.46)
%Toehold		0.287
		(1.01)
Constant	-0.096	-0.098
	(2.28)**	(2.22)**
Observations	114	114
R-squared	0.01	0.03

Panel B: *Acquirer CARs*

	(1)	(2)
	CAR(0,+60)	**CAR(0,+60)**
P(Surprise Interlock)	0.052	0.007
	(0.85)	(0.10)
Relative Size	-0.000	
	(0.49)	
Diversified		0.014
		(0.24)
Cash		0.036
		(0.67)
%Toehold		0.316
		(1.03)
Constant	-0.054	-0.077
	(2.30)**	(2.46)**
Observations	114	114
R-squared	0.01	0.02

Panel C: *Target CARs*

	(1)	(2)
	CAR(0,+60)	**CAR(0,+60)**
P(Interlock)	-0.114	-0.090
	(0.47)	(0.32)
Relative Size	0.029	
	(0.96)	
Diversified		-0.032
		(0.35)
Cash		-0.069
		(0.79)
%Toehold		0.078
		(0.16)
Constant	0.186	0.232
	(2.51)**	(3.18)***
Observations	114	115
R-squared	0.01	0.01

Panel D: *Target CARs*

	(1)	(2)
	CAR(0,+60)	**CAR(0,+60)**
P(Surprise Interlock)	0.116	0.114
	(1.14)	(1.04)
Relative Size	0.034	
	(1.13)	
Diversified		-0.037
		(0.41)
Cash		-0.080
		(0.94)
%Toehold		-0.176
		(0.37)
Constant	0.158	0.226
	(3.30)***	(4.41)***
Observations	114	115
R-squared	0.02	0.02

Panel E: *Portfolio P.CARs*

	(1)	(2)
	CAR(0,+60)	**CAR(0,+60)**
P(Interlock)	0.275	0.263
	(2.36)**	(2.01)**
Relative Size	-0.000	
	(0.49)	
Diversified		-0.013
		(0.32)
Cash		-0.003
		(0.09)
%Toehold		0.045
		(0.22)
Constant	-0.065	-0.062
	(2.24)**	(2.01)**
Observations	228	229
R-squared	0.03	0.02

Panel F: *Portfolio P.CARs*

	(1)	(2)
	CAR(0,+60)	**CAR(0,+60)**
P(Surprise Interlock)	0.071	0.048
	(1.63)	(1.00)
Relative Size	-0.000	
	(0.76)	
Diversified		-0.013
		(0.34)
Cash		0.015
		(0.40)
%Toehold		0.086
		(0.40)
Constant	-0.008	-0.015
	(0.48)	(0.66)
Observations	228	229
R-squared	0.01	0.01

Table 23b: OLS regression of Acquirer, Target, Portfolio Cumulative Abnormal Returns (CARs & P.CARs) for window (0,+60). For ***Panels A, B, C*** the model used is $CAR_{0,60} = \alpha + \beta_1(\text{Interlock}) + \beta_x(\text{Control Variable}_x) + \cdots + \beta_n X_n$, where Interlocked is the ***observed*** interlock, which takes on a value of 1 when an interlock exists between two merging firms and 0 otherwise. Absolute value of z-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%. This table is presented as a robustness check for the results presented in ***Panels A, C, E*** of ***Table 23a***.

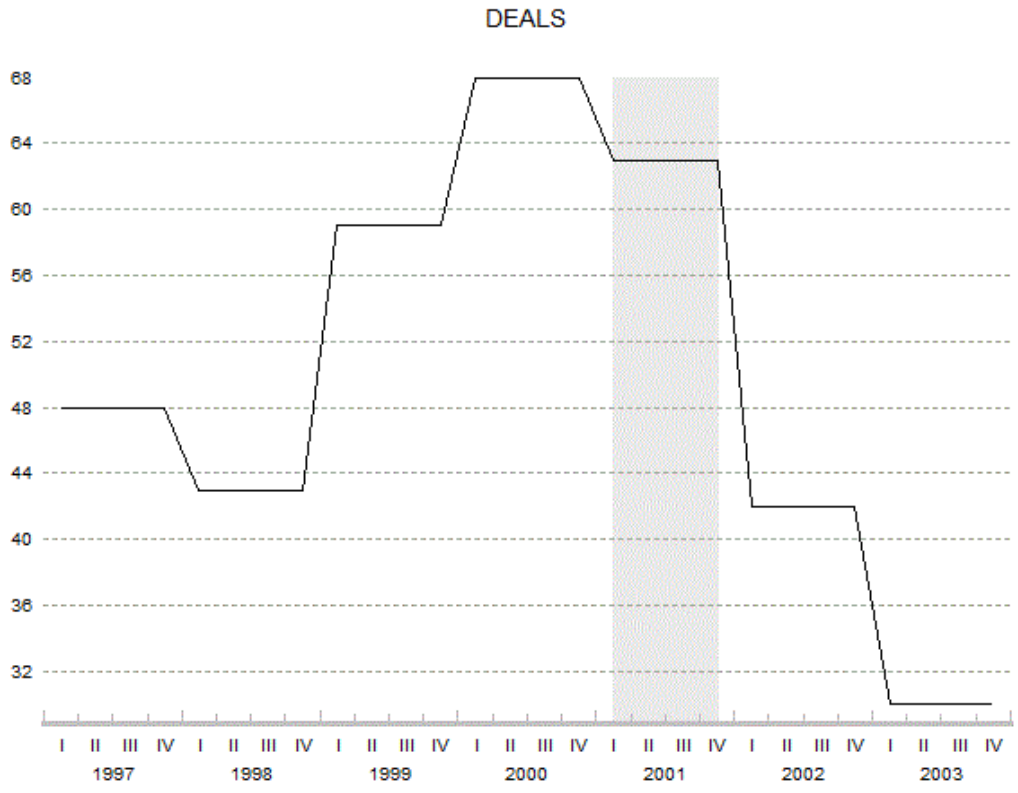
Panel A: *Acquirer CARs*		
	(1)	(2)
	CAR(0,+60)	**CAR(0,+60)**
Interlock	0.075	0.030
	(1.32)	(0.45)
Relative Size	-0.000	
	(0.54)	
Diversified		0.010
		(0.18)
Cash		0.025
		(0.48)
%Toehold		0.292
		(0.93)
Constant	-0.074	-0.084
	(2.94)***	(2.71)***
Observations	119	119
R-squared	0.02	0.02

Panel B: *Target CARs*		
	(1)	(2)
	CAR(0,+60)	**CAR(0,+60)**
Interlock	0.082	0.093
	(0.89)	(0.86)
Relative Size	0.028	
	(1.14)	
Diversified		-0.016
		(0.19)
Cash		-0.069
		(0.84)
%Toehold		-0.220
		(0.43)
Constant	0.141	0.196
	(2.83)***	(3.95)***
Observations	118	119
R-squared	0.02	0.01

Panel C: *Portfolio P.CARs*		
	(1)	(2)
	CAR(0,+60)	**CAR(0,+60)**
Interlock	0.094	0.082
	(2.37)**	(1.74)*
Relative Size	-0.000	
	(0.83)	
Diversified		-0.012
		(0.31)
Cash		0.005
		(0.14)
%Toehold		-0.006
		(0.03)
Constant	-0.029	-0.029
	(1.67)*	(1.32)
Observations	237	238
R-squared	0.02	0.02

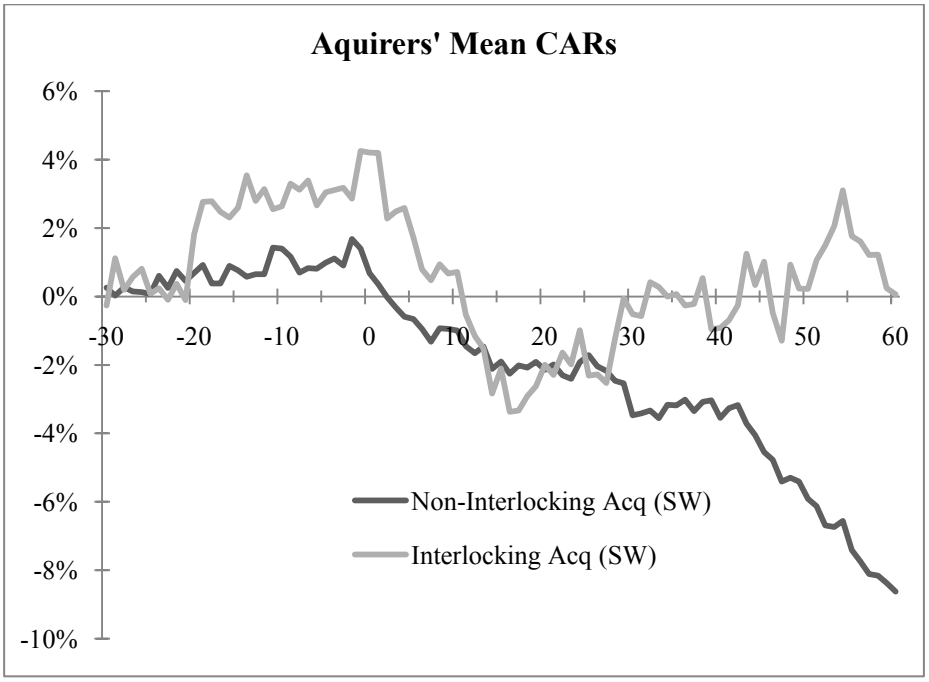
Figures & Graphs

Figure 1: Distribution of Sample Deals across the Sampling Period (1997-2003)[45]



[45] Shaded for National Bureau of Economic Research (NBER) designated U.S. recession

Figure 2: Pre & Post Event Day (Day 0) Acquirer Cumulative Abnormal Returns (CARs)



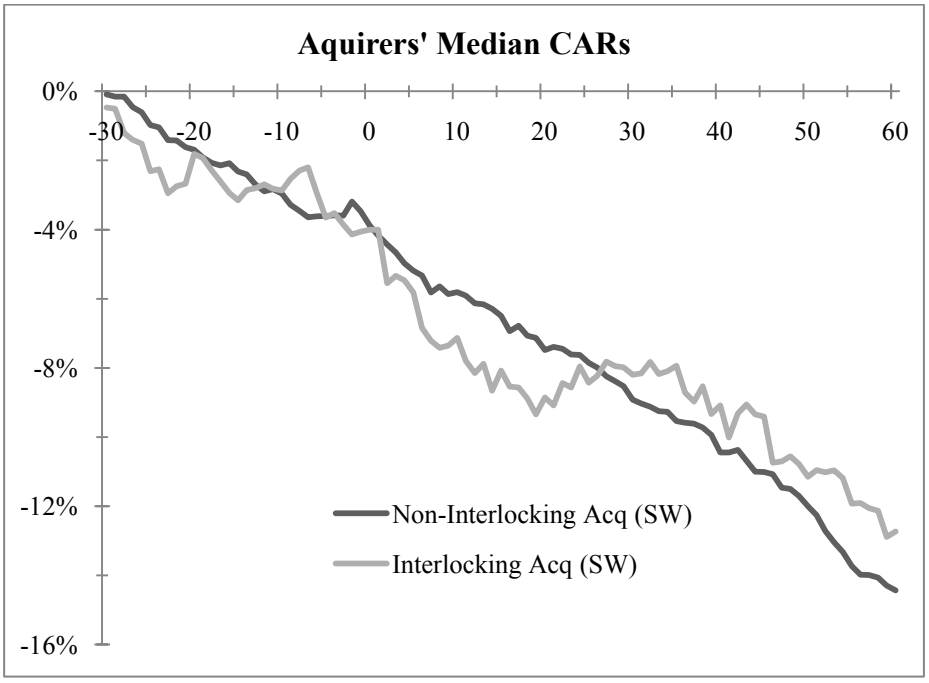


Figure 3: Pre & Post Event Day (Day 0) Target Cumulative Abnormal Returns (CARs)

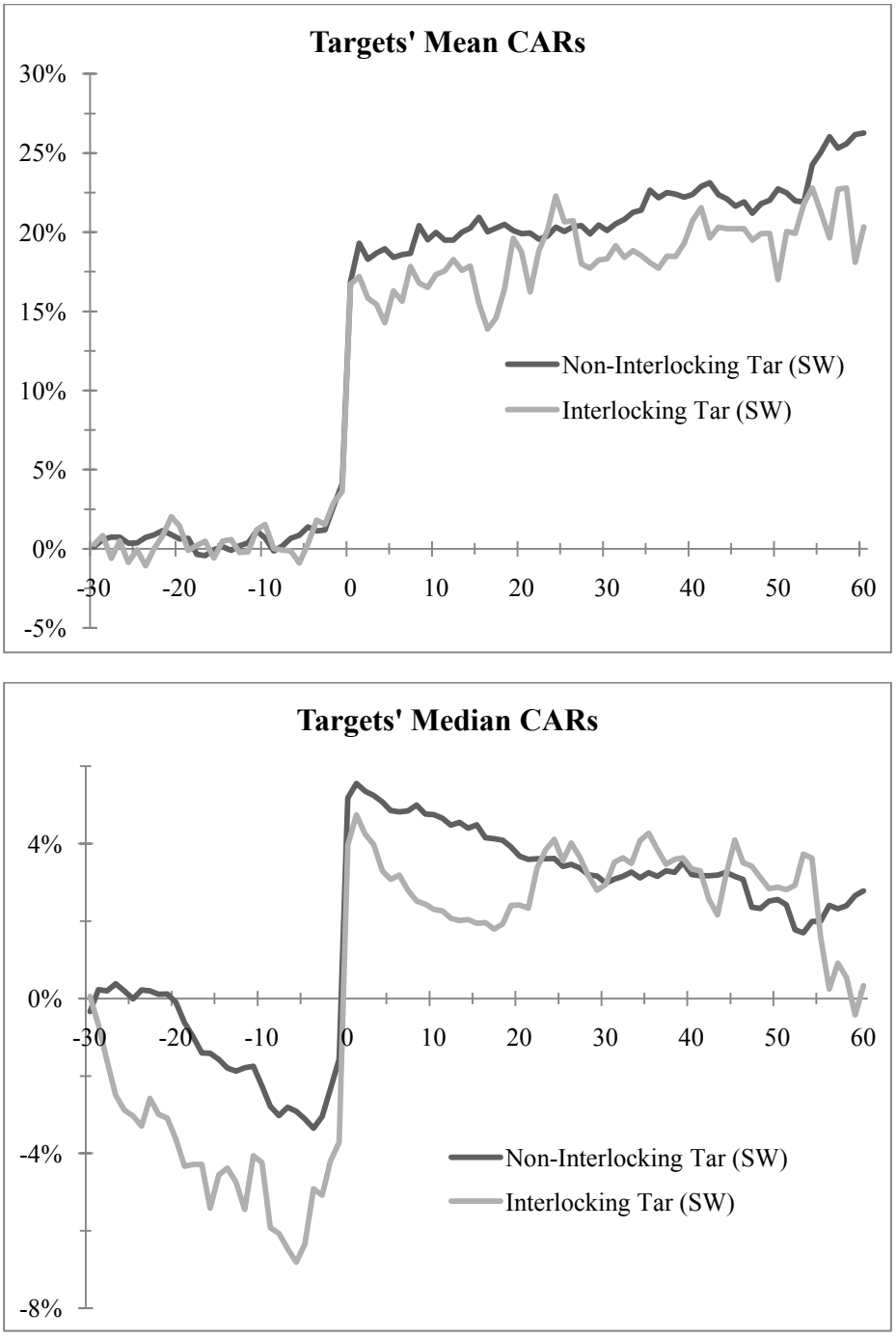
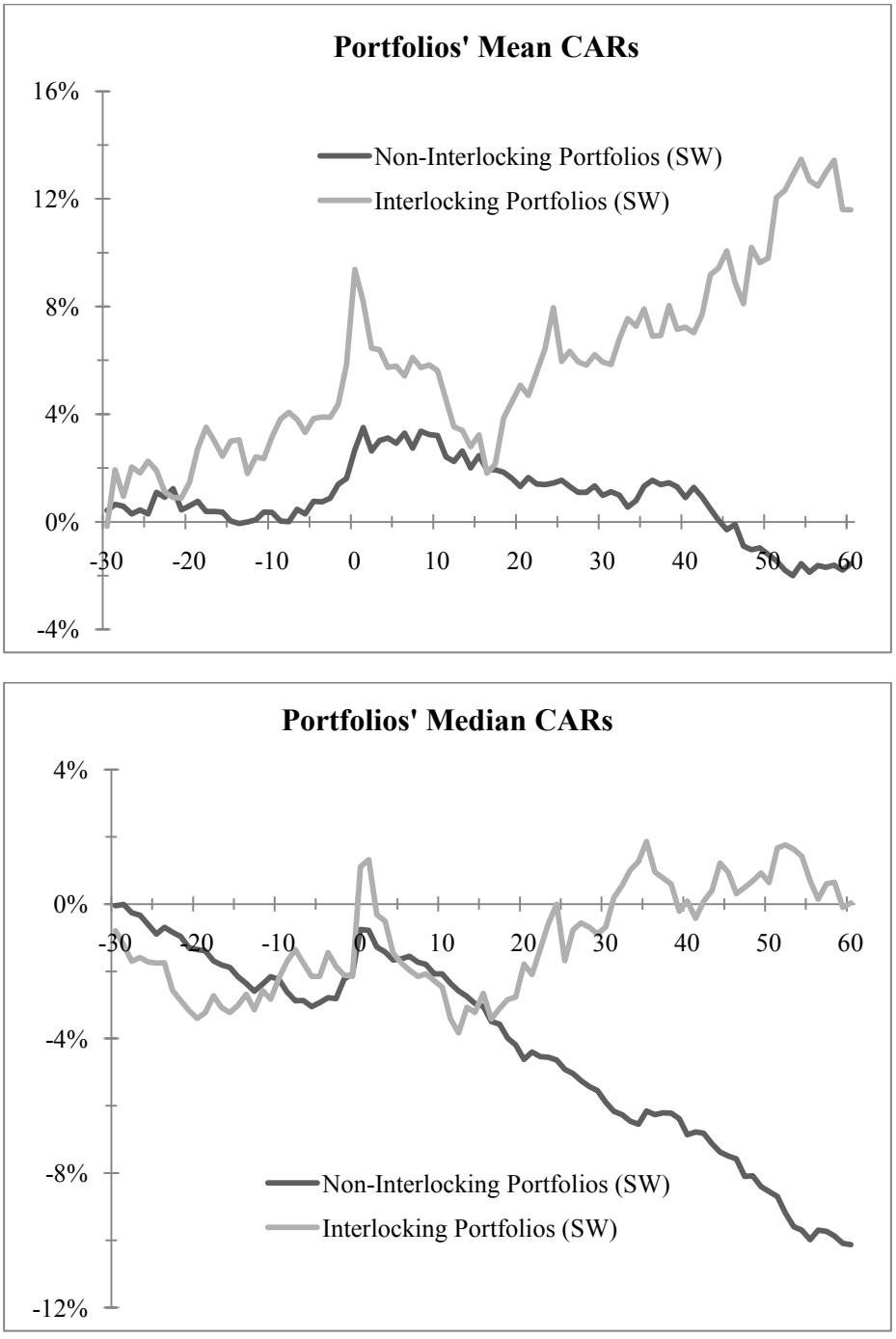


Figure 4: Pre & Post Event Day (Day 0) Target Cumulative Abnormal Returns (CARs)



References

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

Betton, S., E. Eckbo, and K. S. Thorburn, 2007, "Merger Negotiations and the Toehold Puzzle," *Journal of Financial Economics*, forthcoming

Betton, S., W. Nawfal, I. Paeglis 2007 "*Overlapping Boards of Directors: Evidence from Canadian Mergers and Acquisitions*" presented at the Administrative Sciences Association of Canada (ASAC) conference, Ottawa, Canada, June 2007

Brown, S., and J. Warner 1985, "*Using daily stock returns: The Case of Event Studies*", Journal of Financial Economics 14: 3-31.

Bulow. J., M. Huang, and P. Klemperer, 1999, "Toeholds and Takeovers," *Journal of Political Economy*, 107, 427-454

Burkart, M., 1995 "Overbidding In Takeover Contests," *Journal of Finance*, 50, 1491-1515

Catalyst "2007 Catalyst Census of Women Board Directors of the FP500: Voices From the Boardroom" http://www.catalyst.org/file/141/census%202007-%20canada.pdf

Chowdry, B., and N.Jegadeesh, 1994, "Pre-Tender Offer Share Acquisition Strategy in Takeovers," *Journal of Financial and Quantitative Analysis*, 29, 117-129

Clayton Act Prohibition of Interlocking Directorates in Industrial or Commercial Corporations *Columbia Law Review*, Vol. 54, No. 1. (Jan., 1954), pp. 130-132.

Dooley, P. C. 1969 "The Interlocking Directorate" *The American Economic Review*, Vol. 59, No. 3. (Jun., 1969), pp. 314-323.

Dunn, P. 2010 "Breaking the Boardroom Gender Barrier: The Human Capital of Female Corporate Directors" *Journal of Management and Governance* 2010-11-23, Issn: 1385-3457

Fama, E., 1980 "*Banking in the Theory of Finance*," Journal of Monetary Economics, 1980, 6(1), pp. 39-57.

Fama, E., M., Jensen 1980 "*Agency Problems and Residual Claims*," Journal of Law and Economics, 1983, 26(2), pp. 327-49.

Haunschild, P., and R., Beckman, C. M. 1998 "When Do Interlocks Matter?: Alternate Sources of Information and Interlock Influence," *Administrative Science Quarterly*, Vol. 43, No. 4. (Dec., 1998), pp. 815-844.

Hillman, A. J., Shropshire, C., & Cannella, A. A. 2007. "Organizational Predictors of Women on Corporate Boards". *Academy of Management Journal*, 50(4), 941–952.

Hirshleifer, D., Titman, S., 1990. Share Tendering Strategies and the Success Of Hostile Takeover Bids. *Journal of Political Economy* 98, 295–324.

Jensen, M., W., Meckling 1976 "*Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure*", Journal of Financial Economics, October, 1976, V. 3, No. 4, pp. 305-360.

Katz, M, 2008 "Canadian Merger Law and Interlocking Directorships/ Minority Shareholdings", Davies Ward Phillips & Vineberg LLP, *North American Free Trade & Investment Report*

Koenig, T. and R. Gogel, 1981, "Interlocking Directorates as a Social Network", *American Journal of Economics and Sociology*, 40, 37-50.

Nicholls, C., 2006, "The Characteristics of Canada's Capital Markets and the Illustrative Case of Canada's Legislative Regulatory Response to Sarbanes-Oxley," Commissioned by the *Task Force to Modernize Securities Legislation in Canada*

Mintz, B. and Schwartz, M., "Interlocking Directorates and Interest Group Formation," *American Sociological Review*, Vol. 46, No. 6. (Dec., 1981), pp. 851-869.

O'Hagan, S. B. and Green, M. B. 2002, "*Tacit knowledge transfer via interlocking directorates: A comparison of Canada and the United States*," Geografiska Annaler: Series B, Human Geography, 84: 49–63.

Palmer, D. 1983, "Broken Ties: Interlocking Directorates and Intercorporate Coordination" *Administrative Science Quarterly*, Vol. 28, No. 1. (Mar., 1983), pp. 40-55.

Shleifer, A., Vishny, R.W., 1986. Large Shareholders and Corporate Control. *Journal of Political Economy* 94, 461–488.

Simpson, E. H., 1951, "The Interpretation of Interaction in Contingency Tables," *Journal of the Royal Statistical Society*, Vol. 13, No. 2. (1951), 238.

Sing, R., 1998, "Takeover Bidding with Toeholds: The Case of the Owner's Curse." *Review of Financial Studies*, 11, 679-704