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**THE POST-DEREGULATION IMPACT ON THE CANADIAN FINANCIAL SERVICES  
INDUSTRY'S MERGERS AND ACQUISITIONS**

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In  
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of  
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## **ABSTRACT**

### The Post-Deregulation Impact on the Canadian Financial Services Industry's Mergers and Acquisitions.

**Silvia Rodriguez**

Financial services industries around the globe went through tremendous changes in the last decade, and deregulation was one of them. In Canada, deregulation of the industry's four pillars; i.e., banks, insurance, trusts, and investment dealers, occurred on December 9, 1991. Since then, the Canadian government has allowed previously cross-ownership prohibited among the four pillars. The goal of this research is to study the impact of the deregulation on two levels. First, to verify if the systematic risk of the pillars increased following deregulation, and secondly, to examine if mergers and acquisitions (M&As) following deregulation were creators of wealth. Results show that while the banks' systematic risk decreased following deregulation, the risk increased for the other three pillars. As for wealth creation, the bidders had significant positive abnormal returns, while the targets received significant negative returns.

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## **1. INTRODUCTION**

Consolidation of the financial services industry is occurring at an incredible pace around the globe. Berger et al. (1999), identified five changes in economic environments that are partly responsible for the record levels of mergers and acquisitions (M&As)<sup>1</sup> among financial institutions: technological progress, improvements in financial condition, excess capacity or financial distress in the industry or market, international consolidation of markets and deregulation of markets and/or products<sup>2</sup>.

In the US market, the thrift industry has virtually collapsed<sup>3</sup>; the insurance industry is under intense competition, mostly from banks. Within the banking industry, institutions are merging<sup>4</sup> at a rapid pace. For example between 1994 and 1997, more than 1,500 mergers between financial institutions have occurred in the US [Pilloff and Santomero (1997)]. Also, the number of commercial banks fell from 11,500 to 9,200, between 1992 and 1997 [Dermine

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<sup>1</sup> Throughout this paper, the terms merger and acquisition are used interchangeably.

<sup>2</sup> **Technological progress (TP):** TP may increase efficiency, through scale economies; therefore we enhanced shareholder value through consolidation.

**Improvements in financial condition (FC):** Improvements in FC are related to bank profitability, low interest rates and high stock prices. In other words, internally generated funds are less costly than providing them externally. Therefore, when free cash flows reserves are high, acquisitions may become more attractive for managers.

**Excess capacity (EC) / Financial distress (FD):** Firms that have EC, i.e. inefficient product mix or are under the efficient scale, are inefficient. Consolidation is an effective way to eliminate EC. FD problems are closely linked to EC problems. Firms that are underperforming are often taken over to avoid bankruptcy.

**International consolidation of markets (ICM):** Demands by international institutions for different currencies, loans, deposits etc. increased. Thus, M&As of financial firms may come in part from ICM.

**Deregulation:** Removal of geographic and product restrictions has allowed for previously prohibited M&As.

<sup>3</sup> By thrifts we refer to savings and loans (S&Ls) and credit unions. In the 1980s, there was a record failure rate of US S&Ls, followed by taxpayer bailout in the 1990s. The factors cited for this collapse were interest rate risk, deregulation, and economic decline of some geographic markets and X-inefficiencies [Berger et al. (1999)].

<sup>4</sup> Most M&As in the US involved large banks buying smaller banks. In other words large banks are doing

(1999)], and is expected to fall to 4,000 with the arrival of nationwide banking [Mishkin (1999)]. In Europe, since the creation of the European single market (EU) in 1992, consolidation has been extensive. The number of credit institutions fell from 12,256 in 1985 to 9,285 in 1997 [Dermine (1999)]. Finally, in Asia and South America, governments are restructuring their financial sector in an attempt to increase efficiency.

In an attempt to transform its segmented financial sector into a competitive industry, major financial reforms were initiated in Canada from 1984 to 1991. Since complete deregulation on December 9, 1991, Parliament has expanded the powers of banks, trust companies and insurance companies to allow cross-ownership among them<sup>5</sup>. Consequently, deregulation has opened the door to previously prohibited mergers, and Canadian M&As activity has increased at a tremendous pace (see Table 1). Figure 1 shows that once the deregulatory process was completed in 1991, the total dollar value of M&As deals in the following year practically doubled.

Economic analysis identifies two broad motives behind takeover activity. Takeovers are undertaken either to achieve synergies between the bidder and the target firms, or to discipline the target's management. In the latter case, gains can be achieved by changing the operating strategies of the target firm's management. In synergistic takeovers, gains are generated by efficiencies that result from combining the physical operations of the bidder and the target. Consolidation activity, to a large extent, is based on a belief that these performance gains can be obtained through M&As. Thus, mergers result in overall benefits when the consolidated entity is more valuable than the aggregate of the two separate premerger firms. In

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everything in their power to become larger [Boyd and Graham (1998)].

<sup>5</sup> Regarding security dealers, Bill C-56 was approved on June 30, 1987, allowing federally chartered

order to achieve the expected results from mergers, at least one of the following factors must be present — expense reduction, increased market power, reduced earnings volatility or scale and scope economies.

TABLE 1: Number and value of M&A deals by year

	<i>All Industries<sup>1</sup></i>		<i>Financial Services Industry<sup>2</sup></i>	
	Number of deals	Value of deals <sup>3</sup>	Number of deals	Value of deals
1985	1042	15	107	
1986	1198	19	111	
1987	1363	28	123	6.3
1988	1301	24	144	2.8
1989	1208	29.8	118	3.43
1990	828	20.2	99	4.37
1991	723	17.9	98	1.77
1992	580	16.9	83	3.28
1993	895	35.04	65	5.42
1994	1066	46.49	109	5.85
1995	968	78.4	91	3.74
1996	1186	75.40	112	7.13
1997	1276	100.30	139	14.74
1998	1162	148.08	124	8.41

Source: Directory of Mergers and Acquisitions in Canada, 1985-1998, Annual Edition, M&A Publishing, Toronto, Ontario.

1 Industrial Products, Real Estate, Oil and Gas, Financial Services, Consumer Products, Merchandising, Communication and Media, Transportation and Environmental Services, Gold and Silver, Metals and Minerals, Paper and Forest Products, Utilities, and Pipelines.

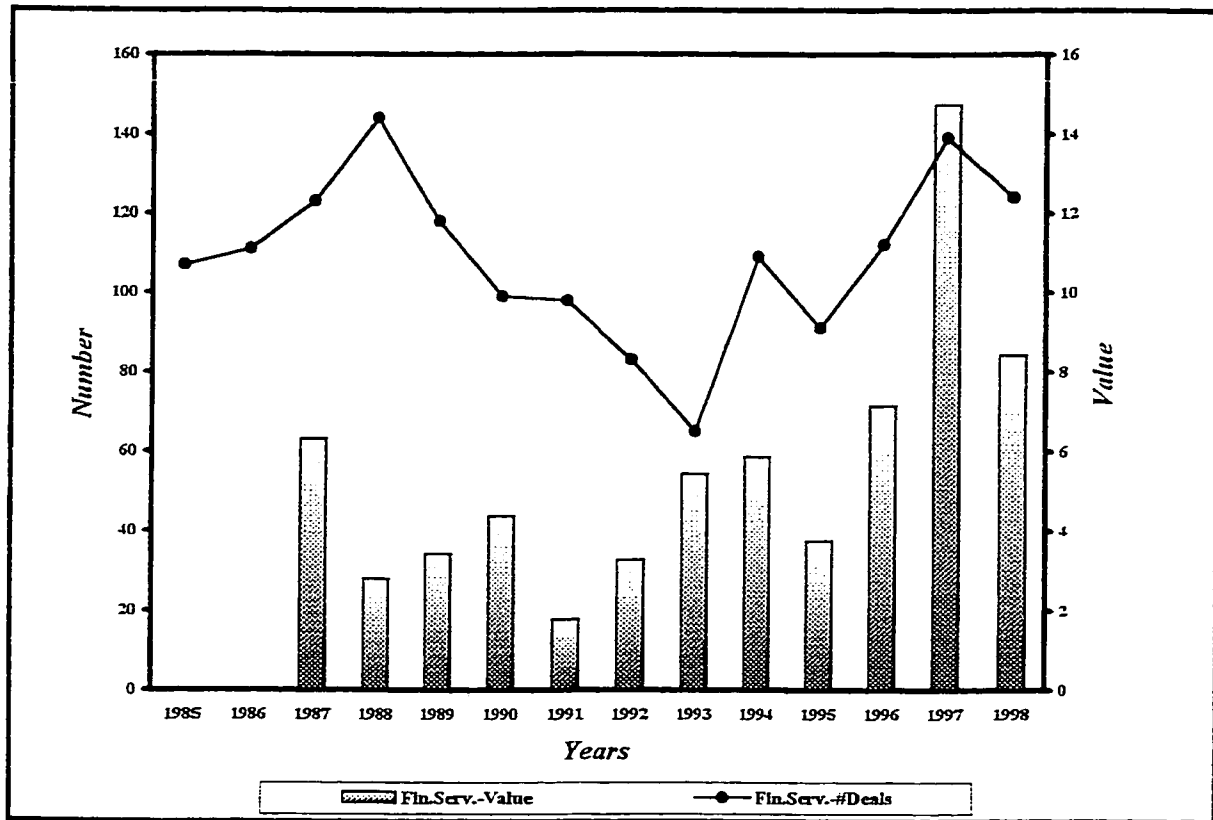
2 Banks, Trust, Savings and Loan, Investment Companies and Funds, Insurance, and Financial Management Companies.

3 Total value of transactions per year in billions of Canadian dollars.

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financial institutions and foreign investors to own 100% of investment dealers.

**FIGURE 1: Number and value of M&As deals in the Financial Services Industry**



Source: Directory of Mergers and Acquisitions in Canada, 1985-1998, Annual Edition, M&A Publishing, Toronto, Ontario.

For that matter, in practice, accomplishing these gains is harder than it seems. First, consolidation is a costly and difficult process. Furthermore, managers may pursue imprudent acquisitions in order to keep up with the industry's pace or to avoid becoming an attractive target.

The purpose of this study is to examine the effects following the Canadian deregulation on Canadian financial institutions. More precisely I want to explore, first, if the risk of financial institutions changed, and second, if there was wealth creation following the Canadian regulatory changes. Section 2 will briefly summarize the deregulation process in Canada and summarize the results of three Canadian papers examining cumulative abnormal returns (CARs) for different financial institutions during deregulation. Section 3 will discuss the

economic rationale behind the regulation and deregulation of industries. Section 4 will examine the previous literature of M&As in the financial services industry. Section 5 provides the hypotheses tested for risk changes and wealth creation, as well as the data and the methodology used for each hypothesis. The empirical results are presented in Section 6 and conclusions are given in Section 7.

## **2. THE CANADIAN DEREGULATION**

The 21st Century has just started and already the world seems very different from what it was just ten years ago. Democracy and free market economies are becoming more and more common. Communist régimes in Eastern Europe have disappeared, while democracy in Latin America is progressing at a steady pace. As for the potential worldwide influence of the Chinese economy, it should increase quite dramatically during this century. The rapid rise of the world's financial capital markets is one of the main factors that influenced the new Single European Market and the disruptions agitating Russia and Southeast Asia. These events not only had major repercussions in these regions, but also around the globe and in Canada<sup>6</sup>.

As societies and economies open up, financial markets, as well as many other markets, internationalize and evolve at an accentuated pace. Globalization provides new opportunities for Canadian financial institutions to compete more intensely and efficiently on both the international and national levels<sup>7</sup>.

Changes in the economic environment present both possibilities as well as challenges. The Canadian financial industry had to evolve in order to cope with all of the changes occurring worldwide. Therefore, during the period 1984 to 1991, the Canadian industry experienced a series of reforms culminating at the end of 1991 with the passage of legislation to amend the Bank and Insurance Companies Acts, and Trust and Loan Companies Acts. These reforms were designed to:

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<sup>6</sup> The world has transformed itself at an unbelievable speed, as stated by the president of the World Bank, J. Wolfensohn, on April 28, 1998: ' Ten to fifteen years ago, one country out of four had a democratic system. Today, it is two countries out of three. Ten years ago, one billion people lived in a free market economy compared to the five billion nowadays ' [FGC, 1998 (1), p.7].

<sup>7</sup> In 1997, 37% of assets of the six major banks (given in note 9) were used for international activities [FGC (1998)]. In average, 35% of their net profit came from foreign operations [McKinsey (1998)].

"Allow cross-ownership of financial institutions, promote both domestic and international competition among the institutions, ensure financial soundness and solvency, and improve corporate governance principles with respect to self-dealing and conflict of interest " [Amoako-Adu and Smith (1995), 1211-1212].

Prior to deregulation, the 'four pillars' characterized the financial industry in Canada. These were banks (deposits and loans), trust companies (fiduciary services and mortgage), insurance companies (insurance) and investment dealers (underwriting and security trading). Cross-ownership was prohibited between banks and non-banks. Also, foreign control of banks and security dealers was prohibited. Since the passage of the legislation in December 1991, removing the ownership constraints between the four traditional pillars, the six major Canadian banks<sup>8</sup> have become the driving force in restructuring in the industry. Today, all major banks are active participants in security trading and underwriting, insurance and fiduciary services via subsidiaries.

In the early eighties, a number of forces influenced the Canadian government to review its regulations governing the financial sector. The primary pressure was the growing perception that Canadian banks competed in an increasingly international environment of universal banks. Financial institutions felt the need to expand into other lines of business to increase profitability. Moreover, international competition pressured corporate lending and investment banking businesses to pursue larger economies of scope<sup>9</sup>, and also increased securities dealers' need for capital. Extra pressure was added by the failure, in 1985, of two

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<sup>8</sup> The 'Big Six' are the Royal Bank, Canadian Imperial Bank of Commerce, Bank of Montreal, Bank of Nova Scotia, Toronto-Dominion Bank, and National Bank.



small banks concentrated mainly in the oil sector<sup>10</sup>. Further, the Canada-U.S. Free Trade Agreement (FTA) accentuated competitive pressures. Also, the unequal regulatory treatment between banks and trusts, regarding respective functions, accentuated the need for a governmental review. However, according to Thomas and Walter (1991) the actual trigger that caused the regulation changes

...Was an initiative of the Bank of Nova Scotia (BNS) in accord with deregulatory moves of provincial authorities. The BNS established an investment bank in the province of Quebec in November 1986 under a clause of the Bank Act that permitted temporary ownership of distressed investment companies by chartered banks. The BNS made clear, however, that it viewed its action as permanent, clearly anticipating that the federal government would be forced to address the reform of the four pillars system before 1990, as required by the Canadian Banking Act...p.112

To my knowledge there have been three studies examining the impact of the deregulation process on Canadian financial firms [Amoako-Adu and Smith (1995), Kryzanowski and Ursel (1993) and Thomas and Walter (1991)]. Amoako-Adu and Smith (1995) examined the wealth effects of the reforms and changes in systematic risk of the four pillars<sup>11</sup> throughout the period 1984 to 1991. They examined 21 events across the latter period (see Appendix 1 for a summary). Out of the twenty-one events, four events were related to the

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<sup>9</sup> Defined in Section 4.

<sup>10</sup> Canadian Commercial Bank (\$352) and Northland Bank (\$318), in millions of Canadian dollars.

<sup>11</sup> Their sample of 36 stocks included 9 banks and 27 non-banks. The non-banks consisted of 8 trust companies, 8 insurance companies, 8 investment dealers and 3 holding companies. The latter are considered non-banks because their subsidiaries are trust and insurance companies. Schedule II banks are excluded because they are private and mostly subsidiaries of foreign banks.

FTA between Canada and the U.S., the remainder were in connection to events related to the passage of the financial reforms. They found 7 significant events and only one of those seven related to the FTA. The 'FTA event'<sup>12</sup> had a negative impact on non-banks due to the fact that FTA was expected to increase competition. As for the other six events, the insurance companies were positively affected by four events, the banks received positive abnormal returns (ARs) in one event and negative abnormal returns in another event, the trust companies were impacted negatively by one reform and finally, the security dealers were unaffected.

Likewise, when CARs were considered [Amoako-Adu and Smith (1995)], insignificant results were found, except for the insurance portfolio. The cumulative effect of reforms for the insurance firms was 10.07%. Also, when wealth transfers between banks and non-banks were tested, the tests were inconclusive. However, an exception was between the banking and the insurance portfolio, where the latter industry gained 11.386% CARs at the expense of banking firms. Finally, when testing for differences in systematic risk ( $\beta$ ) occurring before the first initial proposal and following this proposal, on November 1984, no significant increase was found for banks. However, systematic risk of non-banks increased following the initial proposals of November 1984. This last conclusion is compatible with Peltzman's (1976) statement that industries passing through the deregulation process will witness an increase in their market risk.

Thomas and Walter (1991) and Kryzanowski and Ursel (1993) studied the market reactions to the deregulatory changes regarding the ownership of investment dealers by other financial institutions on June 30, 1987. The first paper investigated the market's response to

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<sup>12</sup> Chairperson, D. McDonald, of FTA committee gives support for FT.

governmental actions<sup>13</sup> leading up to the June reforms in conjunction with determining if total risk increased between 1986 and 1987. Thomas and Walter (1991) found no significant impact of the pre-takeover-announcement events on financial institutions. However, the CARs for the year 1986, including the 4 events under study, were strongly negative for trusts, insurance and investment companies, while those of banks were positive. In other words, performance was not centered on event days; instead it seemed to follow a general evolution across the period. Hence, we see that the market anticipated the future policy changes and subsequently adjusted stock prices based on these expectations. In regards to risk, large bank's systematic risk significantly decreased, throughout the period, as opposed to trusts and investment companies.

Kryzanowsky and Ursel (1993) evaluated the announcements of bank purchases of investment dealers. The banks' sample exhibited a small but significantly negative CARs, [0, +1], on takeover announcements. Thus, any possible synergies from the merger may have been cancelled out by the excessive price paid for the security dealers. In contrast, prior to the takeover announcements, [-20,0], investment dealers experienced significant positive CARs. Similarly, results demonstrated that 'in-play'<sup>14</sup> rivals exhibited positive CARs upon announcement of their competitor takeovers, while 'out-of-play'<sup>15</sup> dealers exhibited insignificant CARs.

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<sup>13</sup> Governmental actions are linked to four events that occurred in 1986.

<sup>14</sup> Non-target firms available for acquisition

<sup>15</sup> Firms that already have been acquired.

### **3. ECONOMIC RATIONALE BEHIND THE REGULATION OF INDUSTRIES.**

Several theories have tried to explain the rationale behind the regulation of industries. The 'public interest theory' [McKenzie and Tullock (1978)] states that regulation exists in certain industries in order to serve the public interest. In other words, regulation is based on the concept that it increases the market's efficiency. For this to happen, inefficiencies such as externalities and monopoly or oligopoly power have to be cancelled out.

Monopoly or oligopoly power occurs when the marginal cost curve of a firm is decreasing. In this situation there is a natural tendency toward monopoly and its associated profits. Therefore, when a few companies control an industry, they can divide the market, restrict the output, and raise prices to consumers. Thus, regulation appears in order to deal with this problem. When an industry is regulated it is forced to sell at lower prices and to produce and sell larger quantities.

Nonetheless, regulatory agencies have not always pursued the public interest. For example, in the U.S., regulators have dramatically affected the market price of natural gas. Economists agreed that regulation in this industry caused inefficiencies in production and consumption. This occurred when regulators stimulated consumption of natural gas causing unjustified reduction of reserves and market shortages. With the latter evidence it is not surprising that economists searched for other theories that could explain the regulatory process.

Stigler (1971) realized that this 'consumer protection' model came dangerously close to treating regulation as a free good. In the previous model, market failure is enough justification for regulation, though there is no discussion about the mechanism by which regulation occurs. Therefore, Stigler developed the 'capture theory' where the good

transacted is wealth. Thus, the most influential group will use regulation to expropriate wealth from the weaker group. In other words, industries will seek regulation to protect their interests. Consequently, the regulatory process does not always correspond to its traditional role; i.e., eliminating inefficiencies by efficiently allocating resources and wealth. In fact, the economic community acknowledged that regulation seemed to engender more misallocation than efficient allocation. Thus, Stigler's pioneering work was influenced with the growing disenchantment of regulation's traditional role.

Peltzman (1976) extended Stigler's theory and developed the 'political support theory'. Under this theory, firms are regarded as demanders of regulation because of associated benefits, while governments are suppliers of regulation in return for votes or political support. As stated by Peltzman (p.230):

“Regulation should reduce conventional measures of owner risk. By buffering the firm against demand and cost changes, the variability of profits (and stock prices) should be lower than otherwise. To the extent that the cost and demand changes are economy-wide, regulation should reduce systematic risk as well as diversifiable risk ”p. 230.

Nonetheless, not all researchers believe that the deregulatory process increases risk. In fact, for some it is not clear *a priori* if the impact of regulation is consistently positive or negative. For example, the interests and concerns of large and small firms differ greatly from one another. Therefore, the industry's deregulation may affect each corporation differently. As opposed to Peltzman, Mingo (1978) argued that regulation could increase risk. For example, deposit interest rate ceilings and portfolio constraints could create instability and

increase risk in the banking system by producing sudden shifts of deposits between banks and non-bank financial intermediaries thereby causing disintermediation. Therefore, the latter regulatory circumstances could increase the bank's risk.

Despite the latter comments, the majority of research finds that the level of risk increases following deregulation of the industry. As already stated in Section 2, Canadian non-banks' systematic risk was increased after the initial proposals of November 1984 [Amoako-Adu and Smith (1995)]. Hogan and Sharpe (1984) and Hogan et al. (1980) studied the impact of regulatory changes on an equally weighted portfolio of Australian banking shares over the period February 1957 to December 1976. In particular, their results indicated an inverse relationship between the severity of regulatory controls and systematic risk. Dickens and Philippatos (1994) examined a sample of banks using weekly data over the period 1973-1988 and their results showed that the systematic risk increased subsequent to regulatory changes.

On the other hand, Fraser and Kannan's (1990) research concluded that the total, risk, systematic and unsystematic, of firms that went through regulation over the period 1976-1986 decreased. In contrast, the systematic risk of firms that experienced deregulation over the same time period did not change significantly<sup>16</sup>. However, certain limitations are inherent to this study. First, the empirical analysis is carried out on a small sample set (18 deregulated firms and 23 regulated firms). Secondly, standard event study methodology has difficulties accurately measuring abnormal returns when the timing of new information is uncertain<sup>17</sup>. In fact, regulatory announcements are more likely to be anticipated than are corporate announcements. Therefore, it can be difficult to pin point the specific date of a regulation

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<sup>16</sup> Yet, unexpectedly the difference between both samples expanded because of a decrease in risk in the regulated sample instead than an increase in risk in the deregulated sample.

change, given that these changes usually involve no single well-defined announcement date. Thus, due to the imprecise timing of new information, it is not certain that significant effects on stock returns can be detected even for the most important regulatory changes. As a result, failure to discover effects on stock prices would be due to difficulty in identifying event dates rather than to a choice of unimportant regulatory changes.

An important paper by Brooks et al. (1997), extended the traditional analysis; i.e. of verifying changes of beta risk (systematic risk) from one period to another, by examining beta instability within each period. Their results were striking. They investigated the stability of the market model's betas for 18 U.S. banks in five separate phases<sup>18</sup> of the regulatory process. One major result is that even if the systematic risk increased significantly over the full regulatory process, the change was not consistently associated with either the regulatory or the deregulatory periods. Thus, there is little support for Peltzman's conclusions. The major contribution of Brooks et al. was the finding of beta instability within each sub period. Brooks et al. tested for heteroscedasticity using the Hildreth and Houck (1968) model<sup>19</sup> (H&H) and found positive results. The latter findings revealed that beta instability was positively related to regulatory changes regardless of the type of changes; i.e. regulatory or deregulatory changes. Nonetheless, in both deregulatory periods under study (the Monetary and the Deregulatory Periods) beta instability was greater than in the Reregulation period, even though the highest beta risk was detected in the latter period. Finally, Brooks et al. compared the banking portfolio's instability results to the instability results of a randomly selected control sample of

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<sup>17</sup> See Brown and Warner (1980, 1985).

<sup>18</sup> The Pre-regulatory change period, the Monetary Experiment period, the Deregulation period, the Reregulation period and the Post-regulatory change period.

<sup>19</sup> The H&H model asserts:  $\beta_{it} = \beta_i B + a_{it}$  where  $a_{it}$  is distributed  $IN(0, \lambda_0 \sigma_i^2)$ ; and where the market

100 non-banks for the same five sub periods, in order to analyze if regulatory changes only affected the banking industry. Their findings showed similar patterns for both portfolios. However, the non-banking portfolio's reaction to instability was always a period later than that of the banking portfolio. The latter result suggests that the impact on the banking sector leads the rest of the economy.

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model disturbances become heteroskedastic; i.e.  $\sigma_{it}^2 = \sigma_i^2 (1 + \lambda_0 R_{mt}^2)$ .



## **4. LITERATURE REVIEW**

In the next section the two classes of M&As theories will be reviewed, i.e. the non-value maximization theory and the value maximization theory. As stated in Section 1, M&As are generally viewed as a value maximizing strategy. Consequently, empirical studies in general, have tried to measure the merger-related gains. To accomplish the latter task, research has employed two approaches: the accounting method and the stock market method. Advantages and disadvantages of each approach will be outlined and a literature review for each method will be given. However, since the present research uses the stock market method, only a brief review will be given of the accounting method (see Appendix 2 for a more detailed description of the accounting method).

### **4.1 Theories**

The non-value maximizing theory relates to the behaviour of the acquiring management whereby they seek to maximize sales or asset growth and/or to control a large empire. In this type of transaction there are no economic gains to be divided among firms, considering the existence of important negotiation costs, as well as inherent problems of coordination associated with corporate expansion. Thus, under this theory any gains resulting on the target's side are offset by losses on the acquirers' side. The growth maximization hypothesis is often associated with conglomerate<sup>20</sup> mergers.

The value maximization theory relates to the basic assumptions of any investment decision, i.e. expectation of a positive economic gain. Therefore, following a merger, total

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<sup>20</sup> Conglomerate mergers involve firms engaged in unrelated types of business activity [Copeland and

shareholder wealth should increase, due to the creation of value from the business transaction. There are numerous reasons consistent with the value-maximizing mission which can be classified into four different categories, increased efficiency, reduced earnings volatility, advantage of asymmetric information about the target and target control.

In the first category, we expect synergy to be achieved by the merger, given the expectation of increased cash flows following amalgamation of the two firms. A more efficient administration of costs can achieve these gains, by eliminating, for example, redundant operating costs<sup>21</sup>. Also, synergy gains can be obtained through improved revenue efficiency<sup>22</sup> and market power expansion<sup>23</sup>.

In the second category, we can decrease the volatility of earnings by diversifying. By diversification we mean, broadening the geographic territory, the scope of the firm's products and services offered, and/or extending the customer base. By reducing volatility, according to Pilloff and Santomero (1997), bankruptcy costs may be reduced, level of taxes paid may fall, and earnings may increase due to higher stability.

In the asymmetric information category, management of the bidding firm holds

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Weston (1988)].

<sup>21</sup> Costs efficiency can be obtained via economies of scale and scope. Scale economies can occur when larger institutions may be more efficient if redundant facilities, or personnel and/or activities are eliminated. On the other hand, when costs may be decreased if a corporation offers several products at lowered costs than separate entities providing individual products, these are named economies of scope.

<sup>22</sup> Revenue efficiency can happen through a mix of economies of scale and scope or by cross-selling. Scale economies may capacitate the firm to offer more products; as for scope economies it may permit the company to increase its market share. Any of these two results may increase revenues since management may increase its prices, offer more lucrative product mixes, or include greater marketing programs. As for cross-selling, Pilloff and Santomero (1997) defined it as 'selling various products of each merger partner to customers of the other partner'.

<sup>23</sup> If there is a significant geographic overlap of the merged firm, the number of firms of both entities will decrease. Therefore, it may enable the new entity to increase its profits.

information that is unknown to the market. These facts may be that the target's shares are undervalued or that the target's management operational strategies are not maximizing efficiency. As a result, the bidding firm's acquisition announcement is signaling the market that it has private information concerning the target. Thus, target's share price should rise.

Finally, in the target control category, management of the acquiring firm desires control to replace unqualified management or to constrain present administration to follow a profit maximizing strategy. By doing so, management from the bidding corporation believes that it is more skilled in decreasing expenses, for any level of activity, than the current management of the target institution.

#### **4.2 Accounting Data Versus Stock Market Data**

The M&A literature tends to assess the impact of acquisitions on both parties. To attain this goal, the literature investigates the pre and post acquisition performance of bidders and targets and attempts to isolate and assess the impact of the merger. Performance measures are based either on accounting data (AD) or on stock price reactions to the acquisition. By and large, the merger literature concludes that consolidation, on average, does not lead to significant performance gains or overall shareholder wealth creation.

The first approach uses AD to determine if consolidation resulted in gains as reported by costs, revenue or profit figures. Users of this method believe that AD is more reliable than stock market returns because it reflects 'real' performance and not investor expectations. The strengths of this approach are the following: the data used is easy to obtain and to understand, the procedure is quite straight forward, and accounting performance can be directly measured.

Nevertheless, papers employing AD are seriously compromised for the following reasons. Since it is based on historical figures, AD neglects current market values. Plus, AD does not provide information on the expected long-run impact of the acquisition for both parties. Also, immediate accounting numbers may not completely reflect total realized gains, because long-term cost savings may only be achieved in subsequent years. Another drawback of AD is that measured changes between pre- and post-merger may not be solely due to the merger; other events may have occurred.

Furthermore, financial ratios may be misleading indicators of efficiency because they do not control for product mix or input prices. In addition, the use of a simple ratio cannot distinguish between X-efficiency<sup>24</sup> and scale and scope economies, while the latter economies immediately change<sup>25</sup> when the merger is consummated it does not necessarily happen for X-efficiencies [Berger et al. (1993)]. Considering the ratios' inability to distinguish between different types of efficiency gains, the predictive power of determining which types of mergers will be successful in improving efficiency is reduced.

The second approach, using event study methodology, measures the reaction of the stock market to the merger announcement. Users of the stock market methodology believe that this method more efficiently discloses the merging value of the new entity. In fact, they believe that stock prices are superior indicators to accounting data and thus they can better reflect the real economic gain of merger activity. Nonetheless, this approach has also its drawbacks. First, most studies cover a short period around the event. They are based on market expectations of potential gains and not on actual gains resulting from consolidation.

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<sup>24</sup> X-efficiency will be defined in section 4.3.

The second problem arises when the post-merger period is increased to evaluate the actual realized gains. These gains might not originate from the merger transaction but rather they may be attributable to actual firm performance. Finally, choosing the correct event window is unclear throughout research. How many days to include in the event window prior to the event, without incorporating too much unrelated noise, and how many days following the event, to allow the market to fully trade on complete information? Empirical and theoretical research has not yet given any precise answers to these problems.

In the last decade a third approach has appeared. This technique not only examines the relationship between merger activity and changes in both accounting and market data, but also measures the correlation between changes in accounting data and abnormal returns [Pilloff (1996), Cornett and Tehranian (1992)]. By doing so, we determine the market's potential to accurately forecast performance changes following a merger. Incidentally, even if we acknowledge that AD is not the perfect measure to calibrate performance, it still allows us to determine whether stock-price gains associated with merger announcements are the result of real economic gains. In other words, this current approach tests whether the market is able to determine which mergers will achieve increased performance and those that will fail to achieve any gains at all.

### 4.3 Literature

Numerous arguments have been put forward to justify mergers as stated in Section 1. In the following section a review of the empirical evidence existing for each argument will be

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<sup>25</sup> Roughly one-half of savings from mergers occur during the first year following the merger. While all savings will be achieved within three years.

presented. A large literature has reviewed numerous motives for M&As in the financial services industry [Berger et al. (1993,1999), Dermine (1999) and Spilloff and Santomero (1997)]. First, empirical work using accounting data will be briefly discussed (see Appendix 2). Secondly, literature containing stock market reactions will follow. Finally, research that incorporates both approaches will conclude.

#### **4.3.1 Accounting Data**

Scale and scope economies are often quoted by many firms as reasons for acquisitions in order to achieve costs reductions. Therefore, if research detects the presence of these economies, it means that there are inherent cost advantages to becoming larger. While scale and scope efficiencies have been extensively studied, less focus has been given to X-inefficiencies, i.e. deviations from the efficient frontier. X-inefficiencies refers to the fact that the firm has too high a cost structure. X-efficiency appears to be a much more important source of efficiency compared to scale and scope. Empirical research suggests that X-inefficiency represents 20% or more of costs in banking, while scale and product mix inefficiencies account for less than 5% of total costs [Berger et al. (1993)].

Berger, Hancock and Humphrey (1993), found that larger firms are substantially more X-efficient on average or closer to the frontier than smaller firms. On the other hand, in earlier work Berger and Humphrey (1992) found no X-efficiencies in bank mergers that occurred in the 1980's with at least \$1 billion in assets.

Furthermore, AD can serve to construct standard corporate finance measures; i.e. accounting ratios. Using these measures Benston et al's (1995) established that acquiring

banks seek earnings diversification. Also, Rhoades (1993) analyzed the efficiency of 898 horizontal mergers that took place between 1981 and 1986. Their results demonstrated that merged firms did not decrease expenses relative to other firms, that overlapping operations did not improve efficiency and also, that rapidly growing firms had total expense ratios that increased quicker than slower growing firms.

#### 4.3.2 Stock Market Data

Turning to studies measuring the market's reactions to merger announcements using market data, research generally finds that little or no gains result from consolidation.

Barniv and Hathorn (1997) used accounting and financial information to explore if mergers in the insurance industry<sup>26</sup> are primarily a result of efforts to overcome financial distressed insurers<sup>27,28</sup>. They found that from 20% up to 46%, depending on the model employed, of the merged insurers were distressed. These findings, compared to other industries, are much higher. Consequently, it appears that in this industry, mergers are a viable alternative to insolvency. However, acquiring firms buy distressed insurers but not insolvent insurers<sup>29</sup>.

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<sup>26</sup> Barniv et al. used 2,986 property-liability insurers from the National Association of Insurance Commissioners from 1984 through 1992. Their sample was composed of 2,807 solvent insurers, 179 insolvent insurers and 124 merged insurers.

<sup>27</sup> Distressed insurers experienced financial difficulties and have difficulty sustaining operations. For example a few characteristics that distinguishes them from solvent insurers are: they are smaller in size, they have significantly lower profitability ratios and they have significantly higher instability in their reserves compared with solvent insurers.

<sup>28</sup> For example, about 73% of publicly-traded firms that acquire or sell merged insurers are other insurers, the remaining firms come from other industries. In fact, all acquirers of distressed insurers in Barniv and Hathorn's study were other insurers.

<sup>29</sup> Research distinguishes between differences among distressed insurers and insolvent insurers. Distressed insurers have higher net income, have more cash invested in assets relative to liabilities and have more surpluses relative to assets and premiums. As for insolvent insurers, they have net losses.

The market reaction, as measured by the CARs<sup>30</sup>, indicates that sellers of distressed insurers earn higher significant CARs than acquirers of distressed insurers or sellers of financially sound insurers. Plus, acquirers of distressed insurers earned positive but insignificant or negative significant CARs, while sellers of financially sound insurers received insignificant CARs. Hence, it can be concluded that the market does not reward acquirers of distressed insurers. In fact, data shows that during the year following the merger, insurers that had bought distressed firms suffered decreases in cash flows.

Demsetz and Strahan (1997) sought to verify if bank holding company (BHC) diversification strategies via mergers were resulting in risk reduction. The authors established a strong correlation between asset size and diversification meaning that larger BHCs will diversify more. Portfolio theory states that diversification will decrease the firm-specific risk; therefore, they analyzed the connection among size and firm-specific risk. They observed a low relation between these two variables suggesting that large banks did not use their superior diversification advantage<sup>31</sup> to reduce risk. In fact, firm-specific risk is affected, not only by diversification, but also by the specific risk of the individual components of a bank's assets, liabilities and leverage.

Research shows that large banks are more concentrated in commercial and industrial lending (C&I)<sup>32</sup>, they hold more assets in the trading account, in foreign deposits and also in derivative instruments. In other words, they hold riskier firm-specific components than smaller

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<sup>30</sup> CARs are estimated from -250 days before the event to +250 days after the event.

<sup>31</sup> Their diversification advantage is that they operate with lower capital ratios [McAllister and McManus (1993)] and pursue riskier activities [Akhavain et al. (1997)]. This is consistent with Benston et al. (1995) 'Earnings Diversification Theory' stating that acquirers pursue earnings diversification in an effort to generate higher levels of cash flow for the same levels of total risk.

<sup>32</sup> In fact, C&I lending is riskier than other types of bank lending.



banks, which tend to have higher capital ratios, more concentrated loan portfolios<sup>33</sup> and also higher ratios of total deposits to total assets [Demsetz and Strahan (1997)]. Therefore, the riskier portfolio components of the typical large BHC tend to offset the risk-reducing potential of diversification. Because BHCs are able to operate with higher leverage and engage in riskier activities without increasing their risk, Akhavein et al. (1997) and Demsetz and Strahan (1997) stated that they should be able to engage in more profitable portfolios. In other words, diversification and growth via mergers should increase profits for banks. Consequently, diversification could be an important factor explaining the consolidation wave in the banking industry.

Boyd and Graham (1988) simulated mergers between BHCs and non-banking firms<sup>34</sup> (securities firms, insurance and real estate) using accounting and market data between 1971 and 1984. They concluded that mergers between BHCs and insurance companies decreased bankruptcy risk, as opposed to securities or real estate where risk increased; the last results for the latter industry are consistent with Rosen et al. (1989). Boyd et al. (1993) extended the previous study by increasing the number of years and the number of firms<sup>35</sup> and found similar results. Furthermore, as explained by Cummins et al. (1999), the most important lines of business in the insurance industry, in terms of revenues and profits, are the ones involving asset accumulation products, such as individual life insurance and individual and group annuities. Thus, insurers face severe pressure from banks, mutual funds and investment advisory firms in

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<sup>33</sup> It means less dispersion in lending across agricultural, C&I, consumer, real estate and other types of loans.

<sup>34</sup> The simulation of hypothetical mergers was done by randomly combining, with replacement, a BHC and a firm from a non-banking industry.

<sup>35</sup> Their study was conducted from 1971 to 1987 and their sample included: 30 life insurance companies, 16 property/casualty insurance firms, 20 insurance agent/broker, 27 securities firms, 69 real estate

the latter lines of business, because these competitors have lower distribution costs.

The previous studies did not directly address the crucial question of whether amalgamation in the financial services industry resulted in a net gain to shareholders of the two firms, regardless of the division of the gain. Six studies [Hannan and Wolken (1989), Houston and Ryngaert (1994), Madura and Wiant (1994), Zhang (1995), Cornett and Tehranian (1992), and Pilloff (1996)] applying the value-weighted procedure will be outlined.

Hannan and Wolken (1989), using the market model for 43 acquisitions between 1982 and 1987, found no value creation from amalgamation of the two firms. Nevertheless, they found that less capitalized targets register significant positive combined wealth effects, as opposed to more capitalized targets<sup>36</sup>. In addition, not only was a significant negative relationship between target capitalization and target abnormal returns detected, but also a marginal but significant negative correlation was found between target capitalization and the bidder's abnormal returns.

Houston et al. (1994), found positive but insignificant overall gains, for 153 large bank mergers of at least \$100 million in assets for the period 1985 to 1991. In fact, the significant (1% level) positive returns of targets were offset by the significant (1% level) negative returns to bidders. Still, the market perceived some mergers as more valuable than others. For example, bidders' abnormal returns were significantly superior when the firm had a good past performance record. Also, in-market transactions resulted in higher ARs due to overlapping operations between the two companies. Finally, the method of payment; i.e., stock or cash, had differing influences on the transaction's ARs. The market perceived common stock

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development firms, 67 other real estate companies, and 141 BHCs.

<sup>36</sup> The level of capitalization is defined as the capital-asset ratio.

payments negatively, while the use of conditional or preferred stock resulted in more positive returns<sup>37</sup> for the combined value-weighted portfolio.

One of the weaknesses of event methodology, as stated in Section 4.2, is that most studies cover a short period around the event day. Therefore, the ARs obtained are based on the market's anticipation of future potential gains, and not on realized benefits coming from the acquisition. Madura and Wiant (1994) measured the valuation effects of bank acquisitions over a 36-month period following the merger announcement, as Rhoades (1993) and Peristiani (1997) did. First, Madura and Wiant estimated if the beta increased subsequent to the acquisitions. This estimation is vital, because if the BHCs risk was affected by the acquisition we have to use the new beta in calculating the ARs succeeding amalgamation. No significant beta shift was found.

Madura and Wiant's (1994) sample consisted of 152 bank acquisitions during the 1983-1987 interval. Post-acquisition returns were highly negative, reaching -27.06% by the end of 36-months<sup>38</sup>. Notwithstanding, bidders that had low pre-acquisition growth had higher performance<sup>39</sup> following the acquisition; this is consistent with Rhoades (1993). Plus, bidders engaged in interstate acquisitions performed worse than those acting in intrastate mergers<sup>40</sup>,

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<sup>37</sup> When the firm issues common shares with fixed terms, the market perceives this transaction as either the bidder's shares or the potential advantages of the merger are overvalued. However, when the bidder promises to issue equity, with the number of shares being a function of the future price of the bidder's stock (i.e. conditional stock offer), or when the bidder pays with cash or issues preferred stock, the market perceives either of these transactions as the bidding firm's stock is undervalued.

- Out of the 36 months all had negative ARs except for 4 months.
- 12 months had negative ARs exceeding one percent.
- 73% of acquiring banks had negative CARs for the 36-month period.

<sup>39</sup> Madura and Wiant explain this result by suggesting that growth-oriented banks may be less able to benefit from acquisitions, because they are focussing more on achieving the acquisition than on the necessary restructuring to make the acquisition work.

<sup>40</sup> Interstate acquisitions are those transactions occurring across state lines. While intrastate acquisitions

due to overlapped operations; consistent with Houston et al (1994). To conclude, bidders experiencing poor pre-acquisition performance tended to encounter superior post-acquisition performance<sup>41</sup>.

Zhang's (1995) research based on 107 bank takeovers in the U.S., during the 1980's, reached very different conclusions. Zhang found positive and significant overall wealth creation. He studied three event windows and all had significant positive CARs<sup>42</sup>. However, when the sample was divided into bidders and targets, and that separate CARs were reviewed, CARs for the acquiring group were insignificant and near zero, thus, the targeted group had positive and statistically significant CARs. Also, when a cross-sectional study was used to determine the factors of wealth creation, efficiency and diversification were found to be significant. The latter findings suggest first, that as the target's size increases relative to the bidder, wealth creation will decrease, and second, that interstate takeovers will create superior gains than intrastate takeovers.

#### 4.3.3 Correlation method

Cornett and Tehranian (1992) examined 30 large holding company mergers<sup>43</sup> that occurred between 1982 and 1987. As Zhang (1995), Cornett et al found wealth creation succeeding the merger. The merged banks outperformed the banking industry<sup>44</sup>, and similarly,

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take place at the state-level.

<sup>41</sup> Again, Madura and Wiant's explanation is that poorly performing banks may be pressured to draw out efficiencies from M&As. Therefore, these firms are more likely to follow through on the unpopular tasks, such as restructuring, to achieve potential costs savings.

<sup>42</sup> The event windows under study were: [-1,0][-2,2][-5,5].

<sup>43</sup> The sample is divided into 15 intrastate mergers and 15 interstate mergers. Results obtained were similar for intrastate and interstate mergers.

<sup>44</sup> The merged banks under perform the industry by 0.2% (significant 1% level) before the merger, but

significantly increased their cash flow returns in comparison to the industry subsequent to the merger. The increased performance came from a larger ability to attract loans and deposits, an increase in employee productivity and also in profitable asset growth. These results suggest that the market was able to predict which mergers were going to result in gains and which were not. However, the sample selection for the benchmark was criticized by Pilloff (1996) who believed that Cornett and Tehranian's sample was biased. Pilloff stated that the latter benchmark incorporated too many banks from the southwest, a region that performed poorly in the late 1980s. Therefore, findings of post-merger gains may be due solely to the biased data used in the benchmark.

Pilloff (1996) combined both methods in order to determine if the market could accurately forecast performance improvements at the time of the merger announcement. No significant relation was found between changes in market value and changes in performance as measured by accounting data. This means the market was unable to predict which consolidations would result in synergies. In fact, each method (CARs or Accounting Performance) had different factors affecting its changes<sup>45</sup>. Nevertheless, Pilloff's results were similar to the majority of the literature. Mergers did not significantly improve performance, and also the overall change in shareholder value was quite small<sup>46</sup>.

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outperform the industry by 1.2% (significant 1% level) afterward. The latter percentages represent the mean annual industry-adjusted cash flow return of -0.2%.

<sup>45</sup> CARs changes were associated with factors leading for costs reduction. Oppositely, accounting performance changes were related with certain target and acquirer expenses, and both absolute and relative target sizes.

<sup>46</sup> Various event windows were studied. None of them lead to significant increases in wealth creation, except for the window [-10,0] with a CAR of 1.44%, significant at the 10% level.

## **5. DATA AND METHODOLOGY**

First, I will examine if Canadian financial institutions' risk increased following the deregulatory process. As stated in Section 2, the Canadian financial industry went through a series of reforms during the period 1984 to 1991. At the end of 1991, complete deregulation occurred permitting M&As among industry participants. Therefore, research will be conducted for the period 1984 to 1997, divided into two sub periods; 1984-1991 (Deregulation Period) and 1992-1997 (Post-deregulation Period). Second, I will study if wealth creation occurred from M&As happening in the post-deregulation period; i.e. between 1992 through 1997.

Beforehand, a brief account of the classification process of the firms under study is provided. Companies used in this study were classified into the four pillars; i.e., the banking sector, the insurance sector, the trust sector and the investment sector. Classification was done using the Canadian Standard Industrial Classification Codes and also the American Standard Industrial Classification Index (See Appendix 3)<sup>47</sup>.

### **5.1 Analysis of the systematic risk change**

In Section 3, different theories explaining the rationale behind regulation were discussed. The majority of papers indicated an increased beta following deregulation. This result is explained by the Peltzman (1976) theory stating that regulation decreases systematic risk by buffering the industry against demand and cost changes. Therefore, the inverse process

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<sup>47</sup> Standard Industrial Classification (SIC) codes came from different sources: Directory of Mergers and Acquisitions in Canada, The Guide to the Canadian Financial Services Industry, The Globe and Mail Report on Business, 1984/1997 The Canadian Business Directory.

should increase risk. Dickens and Philippatos (1994) indicated that we should observe an increase in a firm's systematic risk during the first few years following regulatory changes. The loss of regulatory protection will be reflected in a higher variability of the firm's earnings due to less control of their prices. Nonetheless, following this 'learning period', as named by Dickens and Philippatos, firms adapt to the new realities prevailing in the market, for example by innovating their products and services. Thus, following this adjustment period the firm's systematic risk should stabilize or even decline.

To verify if the latter statement was true in Canada, I test for significant systematic risk shift. I wanted to test the shift of the systematic risk rather than the risk shift in the unsystematic risk (risk inherent to the firm) because, a deregulatory process as stated by Peltzman (1976), affects the industry as a whole. Thus, I wanted to explore which pillar had a higher risk compared to the average risk of the financial industry. Therefore, portfolios were constructed for each pillar to test for these sector wide systematic risk shifts. In other words, I did carry out the regressions on each firm individually and then calculated the average of the grouping to which that firm belonged. This was done in order to examine the overall impact of deregulation on each pillar's systematic risk. Plus, this was also done because each pillar had such as small sample of firms than by regrouping them I wanted to have a better and clearer image.

Hence, tests will be conducted using ten portfolios to capture any risk change caused by the deregulatory process. Firms used to construct these portfolios were traded for the full period of 1984-1991 (Deregulation period) and/or for the 1992-1997 (Post-deregulation period). The year 1984 was chosen as the beginning of the deregulatory

period because, as discussed in Amoako-Adu and Smith (1995), November 7, 1984 was the first public proposal for reform. The year 1991 was chosen as the end of the deregulatory period because on December 9, 1991 the Canadian government passed legislation to amend the Bank, Insurance, Trust and Loan Companies Acts. The 1992-1997 post-deregulation years were selected to correspond to the second part of this research, the wealth creation effects of M&As carried out over the same period. Once firms were selected (see Appendix 4) they were classified into one of the four sectors of the financial services industry (see Appendix 3). Firms' daily returns were taken from the CFMRC databases from Concordia University. Tests were then conducted using ten portfolios divided into four categories: (a) portfolio (#1) included all firms from the four pillars divided by sub periods (1984-1991 and 1992-1997), (b) portfolios (#2-5) were divided by pillar and by sub period, (c) portfolio (#6) included all firms and was divided by year, and (d) portfolios (#7-10) were divided by pillar and by year.

Portfolio (#1) was constructed to verify if, in fact, deregulation increased the industry's risk. Thus, a higher beta is expected in the Post-deregulation period. Portfolios (#2-5) were created to examine if one of the four pillars was more responsible for beta shifts in the industry in the Post-deregulation period. Essentially, a higher beta would be expected for the trusts and the security dealers because they are represented by smaller firms in the industry compared to banks or insurance companies (see Table 2).

As shown in Table 2, in 1991 the largest firms (by market capitalization) were the banks, followed by the trusts, the investment dealers and finally the insurance companies. However, it must be pointed out that although the insurance pillar was the smallest in



1991, this portfolio represented only three public firms making it too small of a sample to affirm any general statements. By the end of 1997, the average weighted market value of the insurance pillar had increased 67 times, turning into the second largest of the industry. Therefore, during the post-deregulatory period 1992-1997, the trusts and the investment dealers became the third and the fourth pillars of the industry, respectively.

**TABLE 2: Average Weighted Market Value (AWMV) of Portfolios #2 to #5**

	1991 (billions)		1997 (billions)		# Times increased
	AWMV	# Firms	AWMV	# Firms	
<b>BANKS</b>	6,016,996,386	7	17,848,036,583	7	2.9 times
<b>INSURANCE</b>	76,739,177	3	5,174,759,202	5	67 times
<b>TRUSTS</b>	1,627,537,627	6	5,091,328,017	4	3.1 times
<b>INVEST. DEALERS</b>	305,037,978	9	1,706,910,883	13	5.6 times

As seen in Table 2, trusts and security dealers are the two smallest pillars in the industry. These smaller firms wanting to expand into other lines of business, following deregulation, might of completed risky acquisitions in order to become larger. In other words, because these firms do not have the capacity to acquire large companies such as banks or insurance firms, they will probably buy smaller companies that have similar size as them. Thus, firms of similar size are other trusts or security dealers and these firms have higher betas than the insurance industry (see Table 3). For that reason, following a M&A transaction the combined beta will probably be higher than prior to the merger. So, the combined firms may have increased their business risk, which would be reflected by a higher beta.

Portfolio (#6) was constructed to examine the impact of: First, as the reforms in the Deregulation period were enacted, was risk changing as time passed due to the

expected complete deregulation in the future? Second, once complete deregulation occurred at the end of 1991, what was the reaction of the market during the first few years? Also, as the learning period passed, Dickens and Philippatos (1994), did the beta decrease? Portfolios (#7-10) were constructed for similar reasons as portfolios (#2-5); i.e., first, to observe if one of the financial industry's sectors reacted more strongly to the deregulation period than the others, and second, to verify which of the four pillars in the post-deregulation period 'learned' faster in the new deregulated market.

To test for switches in systematic risk, the Gujarati test set out in Gujarati (1970) will be used. This particular form of switching regression test permits breaks in slope and in intercept terms. The impact of specific events on the systematic risk of the four pillars has been previously studied by Amoako-Adu and Smith (1995), and Thomas and Walter (1991). In this thesis I want to explore the general impact of these reforms on the overall Canadian financial system and on its divisions. Moreover, as stated by Fraser and Kannan (1990) in Section 3, regulatory announcements are more likely to be anticipated than corporate announcements. Therefore, because these changes in regulation are often preceded by an accumulation of ongoing information; i.e. talks between the industry and the government, readings in the Parliament, announcements by Ministers, drafts of legislation, amendments, and finally passage of the bills in the House of Commons, it becomes difficult to determine a specific date for these changes. Thus, in this case it becomes more interesting to observe how the different pillars reacted, in general, to all of these changes in each of the fourteen-one year periods and over the six year period following the complete deregulation.

To test for the following breaks in slope, I assumed that December 9, 1991 when the

Canadian government enacted the new legislation, was the switching point when the beta shift would occur. Then, the method by Gujarati can be illustrated as follows:

$$R_{jt} = \alpha_j + \alpha'_j D_t + \beta_j (R_{mt}) + \beta'_j D_t (R_{mt}) + e_{jt} \quad (1)$$

$R_{jt}$  is the actual rate of return of firm  $j$  over period  $t$ <sup>48</sup>

$R_{mt}$  is the return of the market portfolio over period  $t$ <sup>49</sup>

$\alpha_j$  is the intercept for firm  $j$  during the 1<sup>st</sup> period.

$\alpha'_j$  is the differential intercept coefficient for firm  $j$  during the 2<sup>nd</sup> period<sup>50</sup>

$\beta_j$  is the proxy for the systematic-risk for firm  $j$  in the 1<sup>st</sup> period.

$\beta'_j$  is the differential systematic-risk coefficient for firm  $j$  during the 2<sup>nd</sup> period<sup>51</sup>

$D_t$  is a shift dummy variable; it equals 0 in the 1<sup>st</sup> period (1984-1991), and equals 1 in the 2<sup>nd</sup> period (1992-1997)

$e_{jt}$  is the unsystematic risk component of firm  $j$ 's return for period  $t$

Equation 1 was transformed to correspond to the four categories earlier described. The firms chosen to form each portfolio are detailed in Appendix 4, by sector and by period of data availability. In Dickens and Philippatos (1994) study, only banking firms with continuous data for the complete period were admitted. However, Gujarati (1970) stated that the number of observations per set did not have to be equal.

Moreover, because with regulatory changes we have difficulty determining the precise date of the event, maybe the switching point did not take place on December 9, 1991 as I assumed, but previously. Therefore, the choice of December 9, 1991 as the switching point could bias the estimations of beta. An alternative approach would be to vary the switch point; i.e., from December 9, 1991 to earlier dates to determine if an earlier day was when the beta shifted. This last approach will not be considered because of limited data. Indeed by changing

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<sup>48</sup> Daily stock returns (including dividends) data for each firm were taken from the CFMRC databases at Concordia University.

<sup>49</sup> Daily returns of the CFMRC Value Weighted Index (including dividends) are used as the market proxy.

<sup>50</sup>  $\alpha'_j$  is the intercept value for firm  $j$  in the 2<sup>nd</sup> period and is obtained by adding  $\alpha_j + \alpha'_j$



**(#2-5) Entire sample sorted by pillar and regulatory regime**

Banks:  $R_{2t} = \alpha_2 + \alpha'_2 D_t + \beta_2 (R_{mt}) + \beta'_2 D_t (R_{mt}) + e_{2t}$  (3)

Insurance companies:  $R_{3t} = \alpha_3 + \alpha'_3 D_t + \beta_3 (R_{mt}) + \beta'_3 D_t (R_{mt}) + e_{3t}$  (4)

Trusts companies:  $R_{4t} = \alpha_4 + \alpha'_4 D_t + \beta_4 (R_{mt}) + \beta'_4 D_t (R_{mt}) + e_{4t}$  (5)

Investment companies:  $R_{5t} = \alpha_5 + \alpha'_5 D_t + \beta_5 (R_{mt}) + \beta'_5 D_t (R_{mt}) + e_{5t}$  (6)

**(#6) Entire sample sorted by year**

$$R_{6t} = \alpha_{6;84-85} + \alpha_{6;85-86} D_1 + \dots + \alpha_{6;97-98} D_{13} + \beta_{6;84-85} (R_{mt}) + \beta_{6;85-86} D_1 (R_{mt}) + \dots + \beta_{6;96-97} D_{13} (R_{mt}) + e_{6t}$$
 (7)

**(#7-10) Entire sample sorted by pillar and year**

Banks:  $R_{7t} = \alpha_{7;84-85} + \alpha_{7;85-86} D_1 + \dots + \alpha_{7;97-98} D_{13} + \beta_{7;84-85} (R_{mt}) + \beta_{7;85-86} D_1 (R_{mt}) + \dots + \beta_{7;96-97} D_{13} (R_{mt}) + e_{7t}$  (8)

Insurance:  $R_{8t} = \alpha_{8;84-85} + \alpha_{8;85-86} D_1 + \dots + \alpha_{8;97-98} D_{13} + \beta_{8;84-85} (R_{mt}) + \beta_{8;85-86} D_1 (R_{mt}) + \dots + \beta_{8;96-97} D_{13} (R_{mt}) + e_{8t}$  (9)

Trusts:  $R_{9t} = \alpha_{9;84-85} + \alpha_{9;85-86} D_1 + \dots + \alpha_{9;97-98} D_{13} + \beta_{9;84-85} (R_{mt}) + \beta_{9;85-86} D_1 (R_{mt}) + \dots + \beta_{9;96-97} D_{13} (R_{mt}) + e_{9t}$  (10)

Invest:  $R_{10t} = \alpha_{10;84-85} + \alpha_{10;85-86} D_1 + \dots + \alpha_{10;97-98} D_{13} + \beta_{10;84-85} (R_{mt}) + \beta_{10;85-86} D_1 (R_{mt}) + \dots + \beta_{10;96-97} D_{13} (R_{mt}) + e_{10t}$  (11)

Equations 2 to 11 will be estimated using the ordinary least squares regression (OLS) methodology. Also, portfolios (#1) and (#2-5) were tested for heteroskedasticity. In other words, I wanted to verify if residual variance in the post-deregulation period had changed relative to the prior period. A Breusch-Pagan-Godfrey Test was conducted to test for presence of heteroskedasticity and an Arch test to verify if the variance at time  $t$  was correlated with the variance at time  $t-1$ .

The heteroskedasticity tests indicate, that at a 5% significance level, portfolios (#1-5); i.e., (All/period, banks/period, insurance/period, trusts/period, and investment dealers/period)

revealed the presence of heteroskedasticity. At the 1% significance level, only the trusts/period, and investment dealers/period portfolios revealed the presence of heteroskedasticity. The ARCH tests indicate that at a 5% significance level, 4 portfolios (All/period, insurance/period, trusts/period, and investment dealers/period) exhibited ARCH effects. However, even if the results demonstrated that the variance changed succeeding deregulation and that the variance from one day to the next was autocorrelated, equations (2) to (11) were not altered for two reasons. First, the Canadian financial system is composed of a few players compared to our American counterpart, therefore, when one event impacts a firm it will probably have an effect on the other firms of an industry. And second, as stated by Amoako-Adu and Smith (1995), Kryzanowski and Ursel (1993) and Thomas and Walter (1991), smaller non-bank institutions could be associated with the thin trading problem. For these smaller institutions, absence of daily trading volume occurs frequently. A solution to this problem would be to eliminate firms facing this dilemma. Nonetheless, as stated previously, the Canadian system has only a few players, if I started to eliminate firms from the dataset without enough data, then, I would have too little data to state any conclusions. In fact, Amoako-Adu and Smith (1995) reestimated their equations using several leads and lags in order to verify if thin trading was a problem in their dataset. The results they found were not significantly different; therefore, thin trading was not a major problem.

## **5.2 Analysis of wealth creation**

In Section 4, a review of the M&A literature using the stock market method was presented. In the present section, an event-study methodology will be used to assess if

M&As created merger-related gains in the financial Canadian industry since complete deregulation at the end of 1991. The dataset will focus on transactions that occurred during the period 1992-1997. The data was collected from the Annual Directory of M&As in Canada for the six year period, 1992 to 1997. This source contains all successful M&A carried out during the year. For each transaction it identifies the vendor, the acquirer, the announcement date, the price and the type of transaction.

Following a thorough search through the six years of data, 72 bidders and 30 targets were found (see Appendix 6). For a bidder or a target to be considered, the following criteria had to be satisfied: (1) The company had to be public; if not, returns of its holding company would be considered; (2) Divestitures were included as targets being divested by holding companies. These targets were either public or private subsidiaries of larger holding companies or divisions of a firm. Either way, the returns were taken from the subsidiary if it was public or they were obtained from the holding company if its subsidiary was either private or if they were divesting a division; (3) Schedule II banks were not included in the dataset because they are almost all subsidiaries of foreign banks; (4) Holding companies were classified under their major line of business; (5) M&As going into the dataset were chosen chronologically; i.e., when a firm was in an M&A transaction, regardless if this firm was the bidder or the target in the transaction, transactions made by the same firm in the six months following the initial transaction were not included in the dataset. This was done in order to avoid contamination of abnormal returns by other transactions. And finally, (6) firms that were included in the dataset had to have a minimum of 75 daily returns out of the six months; i.e. out of 136 returns, representing a 55% availability rate. The latter firms were classified using the same

classification utilized in the previous section (see Appendix 3). Subsequently, tests were conducted using 20 portfolios divided as such: (e) 8 portfolios (#11-18) of bidders/targets divided by pillars (banks, insurance, trusts and investment dealers); and (f) 12 portfolios (#19-30) of bidders/targets divided by year (1992 to 1997).

The event methodology used in this paper will be the dummy variable technique [Karafiath (1988)]. This technique provides similar results to the traditional event study, except results are obtained in one step instead of two. I have used the announcement date of the merger as the event day, defined as day '0'. For each security, the daily returns for the 120 days prior to the event day and 15 days following day '0', were retrieved<sup>52</sup>. The period starting at day -120 through -16 is designated as the 'estimation period', and the following 30 days (-15 through +15) is designated as the 'event period'. For each observation in the event period, there is one dummy variable that has a value of one and zero elsewhere. Therefore, the event period interval of thirty observations requires one dummy variable whose coefficient represents the average daily abnormal return over the event period. The model used is the following:

$$R_{jt} = \alpha_j + \beta_j(R_{mt}) + \delta_j D_t + e_{jt} \quad (12)$$

$R_{jt}$  is the actual rate of return of firm  $j$  on observation  $t$

$\alpha_j$  is the intercept for firm  $j$ .

$\beta_j$  is the market's systematic-risk for firm  $j$ .

$R_{mt}$  is the return of the market portfolio on observation  $t$

$\delta_j$  is the average excess return to security  $j$  over the event period of -15 to +15.

$D_t$  is a dummy variable; it equals 0 in the estimation period, and equals 1 in the event period.

$e_{jt}$  is the residual for security  $j$  on observation  $t$ .

Equation 12 was transformed to correspond to the two categories earlier described.

The firms chosen to form each portfolio are detailed in Appendix 6.

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<sup>52</sup> Daily returns were taken from the Toronto Stock Exchange databases at Concordia University.



**(e) Bidders/Targets divided by pillar**

$$R_{it} = \alpha_j + \beta_j (R_{mt}) + \delta_j D_t + e_{jt} \quad (13)$$

Where...

i = Portfolio 11-18

Where..

11 = Banks - Bidders  
 12 = Insurance - Bidders  
 13 = Trusts - Bidders  
 14 = Investment - Bidders

15 = Banks - Targets  
 16 = Insurance - Targets  
 17 = Trusts - Targets  
 18 = Investment - Targets

**(f) Bidders/Targets divided by year**

$$R_{jt} = \alpha_j + \beta_j (R_{mt}) + \delta_j D_t + e_{jt} \quad (14)$$

Where...

j = Portfolio 19-30

Where....

19 = 1992 - Bidders  
 20 = 1993 - Bidders  
 21 = 1994 - Bidders  
 22 = 1995 - Bidders  
 23 = 1996 - Bidders  
 24 = 1997 - Bidders

25 = 1992 - Targets  
 26 = 1993 - Targets  
 27 = 1994 - Targets  
 28 = 1995 - Targets  
 29 = 1996 - Targets  
 30 = 1997 - Targets

Equations 13 and 14 have been estimated using seemingly unrelated regressions (SUR) [Saunders and Smirlock (1987)]. The SUR methodology is more suitable to estimate parameters when the events affect sample firms from the same industry, as it is the case in our Deregulation period. When this happens the returns and the residuals of the market model are quite likely to be cross-sectionally correlated. Therefore, this lack of independence reduces the efficiency of the estimated coefficients. Plus, t-statistics become unreliable if each equation is estimated separately, as it is often done in event studies and as it will be done in the section [Amoako-Adu and Smith (1995)]. Nevertheless, the ordinary least squares regression (OLS) was used to compare results with the SUR methodology, in order to verify if the latter methodology significantly improved the parameter estimation.

## 6. RESULTS

### 6.1 Analysis of the systematic risk change

The results of the tests of the systematic risk change are presented in tables 3 and 4. Table 3 reports the results of shift increase/decrease when the two periods; i.e., deregulation and post-deregulation are compared. In panel A of table 3, I report the results for the case of Portfolio (#1) that included all of the firms from the four sectors. Results show that following deregulation the beta for the industry increased. However, even if the latter result is significant at the 1% level, the increase was extremely small, 0.00048. Also, the R-square was small, explaining only 5.4% of the firms' daily returns.

$$R_{jt} = \alpha_j + \alpha'_j D_t + \beta_j (R_{mt}) + \beta'_j D_t (R_{mt}) + e_{jt}$$

Where...  $j$  = Portfolio 1-5  
 And... 1 = All  
 2 = Banks  
 3 = Insurance  
 4 = Trusts  
 5 = Investment

TABLE 3: Risk shift by regulatory regime and by pillar

	RISK SHIFT	T-STAT <sup>1</sup>	R-SQUARE (OF THE REGRESSION)	SAMPLE SIZE		BETA
				84-91	92-97	
<b>PORTFOLIO (#1)</b>	PANEL A					
<b>ALL</b>	0.00048	2.343 <sup>**</sup>	0.0539	25	29	0.9173
<b>PORTFOLIOS (#2-5)</b>	PANEL B					
<b>BANKS</b>	-0.00010	-0.6081	0.2263	7	7	1.0074
<b>INSURANCE</b>	0.00123	1.391 <sup>*</sup>	0.0168	3	5	0.5956
<b>TRUSTS</b>	0.00075	1.082	0.0536	6	4	0.8747
<b>INVESTMENT</b>	0.00019	0.6897	0.0651	9	13	0.9799

\*\* = Significant at the 1% level

\* = Significant at the 10% level

<sup>1</sup> All portfolios' T-Statistic, in the present paper, were calculated as follows:  $\frac{\sum_{i=1}^n \text{Individual } t\text{-stat}_i}{n} * n^{1/2}$ , where  $n$  is the number of t-statistics in the portfolio.

When we turn to the four pillars and look at the numbers, the first striking result is that

while the banks' risk decreased in the deregulation period, all of the other three pillars increased in beta. However, none of these results were significant except for the insurance sector (10% level). Thus, even if significant the insurance sector beta only increased by a 0.0012.

$$R_{jt} = \alpha_j + \alpha'_j D_t + \beta_j (R_{mt}) + \beta'_j D_t (R_{mt}) + e_{jt}$$

Where...  $j$  = Portfolio 6-10

And... 6 = All

7 = Banks

8 = Insurance

9 = Trusts

10 = Investment

**TABLE 4: Risk shift by year and by pillar<sup>1</sup>**

RISK SHIFT		PORTFOLIO (#6)	PORTFOLIOS (#7-10)			
		ALL (Column 1)	BANKS (Column 2)	INSURANCE (Column 3)	TRUSTS (Column 4)	INVESTMENT DEALERS (Column 5)
D e r e g u l a t i o n	D85	0.00087**	-0.0001	0.00187	0.00052	0.00164**
	D86	0.00073*	-0.00070*	-0.00028	0.00045	0.00228***
	D87	-0.00074*	-0.00115***	-0.00300*	-0.00009	-0.00023
	D88	-0.00029	-0.00003	-0.00046	-0.00032	-0.00040
	D89	-0.00050	-0.00067*	-0.00236	-0.00087	0.00032
	D90	-0.00014	-0.00048	0.01084***	-0.00195	-0.00022
	D91	0.00031	0.00304	0.00110	-0.00119	0.00119
D e r e g u l a t i o n	D92	0.00085	-0.00089	0.00681	0.00096	0.00015
	D93	0.00085	-0.00062	0.00054	0.00049	0.00190
	D94	0.00008	-0.00059	0.00049	-0.00054	0.00055
	D95	0.00041	-0.00041	0.00079	0.00090	0.00060
	D96	0.00049	-0.00002	0.00005	0.00034	0.00078
	D97	0.00019	-0.00037	0.00031	0.00002	0.00051
<b>R-SQUARE</b>		0.0541	0.2271	0.0211	0.0536	0.049

\*\*\* = Significant at the 1% level

\*\* = Significant at the 5% level

\* = Significant at the 10% level

<sup>1</sup> The number of firms by year/pillar is the same than the number of firms by period/pillar used in table 2.

Table 4 presents the results of shift increases/decreases by year for all the firms and also by pillar. The deregulation section of column 1 shows how the financial industry reacted during the first few years to the passage of the financial reforms. In 1985 and 1986, the beta

increased significantly followed by a decrease in the beta risk in the following four years (only 1987 significant). This could be explained by the market's expectations of less regulatory protection. In addition, the investment dealers (column 5) experienced significant increases in risk for 1985 and 1986. These findings could be in part explained by the fact that on June 30, 1987 Bill C-56 was approved allowing chartered financial institutions to own 100% of security dealers. Consequently, the Canadian financial industry, as well as the market as a whole, could have anticipated in 1985 and 1986 the deregulation of the investment dealers' in 1987.

Nonetheless, in the following four years, the risk decreased practically throughout the four pillars compared to the 1984 level, with the exception of the insurance in 1990 and the investment dealers in 1989. As for these last two exceptions, the insurance industry's risk increase of 0.011 in 1990 compared to 1984 (significant at 1% level). The higher risk could be explained by the December 19, 1990 first reading of the Federal government to amend the Bank Act. In the latter Act banks would be allowed to own trusts and insurance companies. Regarding the investment dealers in 1989, the risk shift is not significant. However, in 1991 even if the risk increased for the four pillars, with the exception of the trusts, none was significant.

In the post-deregulation section of column 1 all beta shifts are positive but insignificant, except for 1992 and 1993. So, as expected by Peltzman (1976) risk increased following the deregulatory process, however this was for a short period of time. Starting in 1994 beta shifts were still positive but not significant. Therefore, as stated by Dickens and Philippatos (1994), this implies that the Canadian financial industry adapted to the new deregulated market during the learning period of 1992-1993, because starting in 1994 until 1997 the industry's systematic

risk stabilized and was back at 1984 levels.

When we evaluate the pillars separately (columns 2-5), we reach similar conclusions as in table 3. In other words, the banks' had a lower risk than 1984 every year of the post-deregulatory period, as opposed to the other three pillars where the systematic risk was higher every year compared to 1984, with the exception of the trusts in 1994. The latter conclusion is consistent with Amoako-Adu and Smith (1995) results of non-banks' and Peltzman's (1976) theory reporting that industries or firms going through a deregulatory process will experience an increase in their systematic risk. Unfortunately, except three beta shifts (banks-1992, insurance-1992 and investment-1993) that were significant all of the other beta increases were not significant.

Nonetheless, the latter results offered us a trend of how the industry reacted to the deregulation. For example, banks only had a significant shift decrease in 1992 and this reduction was economically minimal, 0.0009. However, as stated by Demsetz and Strahan (1997), large banks have a diversification advantage when compared to the other three pillars. However, they do not use it to reduce risk. In contrast, the authors suggest that the banks hold riskier portfolio components that offset their diversification advantage. Therefore, they engage in more hazardous transactions without increasing their risk as opposed to the other three pillars. In fact, this last statement is confirmed by positive significant shifts, at the 5% level, for the insurance in 1992 (0.0068) as well as for the investment dealers in 1993 (0.0019).

As for the insurance industry, Barniv and Hathorn (1997) found that in the insurance industry it is common practice to merge in order to overcome financial distress. Research found that the market did not reward acquirers of distressed insurers. Also, Cummins et al.

(1999) declared that the most profitable lines of business in insurance; for instance, individual life insurance, is subject to rigorous competition from the banks and mutual funds, to only name a few. For these last two reasons, insurance firms could accomplish mergers in order to confront increasing competition. On the other hand, these transactions could impact the acquirer and would be manifested by higher betas. As for the investment dealers' 1993 risk increase, it could be a consequence of these smaller firms acquiring other firms of the same size but with higher betas than the bigger companies. Therefore, security dealers could engage in M&As with the aim of becoming bigger and unfortunately could largely increase their systematic risk.

## 6.2 Analysis of wealth creation

When investigating the abnormal returns (ARs), results are presented in tables 5 to 8. Tables 5 and 6 show ARs divided by pillar for both bidders and targets. In table 5, using the SUR methodology did not supply any significant ARs<sup>53</sup>. Nonetheless, the trend shows that all bidder firms received negative abnormal returns, except for the insurance sector where ARs were positive. Notably, ARs for this sector are positive and significant (5%) with OLS. When comparing with the SUR, under the OLS the All portfolio created very small positive but insignificant ARs. Amoako-Adu and Smith (1995) found similar insignificant results from the deregulatory process for the Canadian financial industry with the exception of the insurance sector that earned positive CARs from the reforms.

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<sup>53</sup> Table 5 provides the number of significant firms by pillar. Under the OLS methodology the pillar driving the positive ARs is the insurance pillar. With OLS there are 6 significant firms for this pillar while under the SUR only 4 firms are significant. Also, when we look at the trusts and the investment dealers pillars combined, we have 3 extra negative significant firms. This two effects combined explains



they acquired other firms their abnormal returns were negative indicating that the market definitely did not agree with their purchases. In table 6, the trust companies had an average of -0.0014 daily returns, yet when the latter returns are compared with their ARs, we observe that in average they've obtained 5 times greater negative ARs when they are acquired. This suggests that the market received the targets' purchase as insufficient and/or as a bad transaction. And second, in general the existing literature finds that bidders earned positive insignificant or negative significant ARs while targets received significant positive ARs. In the present research, the conclusions are opposite. Targets produced negative significant ARs while for bidders they were positive, under the OLS technique.

$$R_{it} = \alpha_j + \beta_j (R_{mt}) + \delta_j D_t + e_{jt}$$

Where...  $i = \text{Portfolio 15-18}$       Where...  $15 = \text{Banks - Targets}$        $17 = \text{Trusts - Targets}$   
 $16 = \text{Insurance - Targets}$        $18 = \text{Investment - Targets}$

**TABLE 6: Targets' abnormal returns by pillar**

<b>TARGETS<sup>53</sup></b>							
	<b>OLS</b>			<b>SUR</b>			Average daily returns
	ABNORMAL RETURNS	T-STAT	NUMBER OF FIRMS	ABNORMAL RETURNS	T-STAT	NUMBER OF FIRMS	
Banks	0.0051	1.591*	5	0.0050	1.702*	5	0.00393
Insurance	-0.0012	-0.250	6	-0.0006	-0.409	6	0.00155
Trusts	-0.0095	-0.514	10	-0.0067	-0.163	9	-0.00141
Investment Dealers	0.0015	0.882	9	0.0017	1.101	9	0.00185
All firms	-0.0010	-0.855	30	-0.0002	-1.116	29	0.00148

\* = Significant at the 10% level

One possible explanation for the latter results could be the expansion of bigger firms, such as banks and insurance, into other lines of business. As described earlier, banks, and

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coefficients using the latter methodology. Thus, the number of bidders/targets was of 72/30 for the OLS and 64/29 for the SUR technique.



maybe big insurance companies, possess a diversification advantage that gives them the opportunity to operate with higher leverage and participate in riskier operations without increasing their risk. Therefore, for the same level of risk they will obtain higher returns. On the targets side, banks achieved positive returns, this could be justified by the fact that four out of the five transactions under this category<sup>55</sup> were divestitures done by the banks in order for them to concentrate on their core business.

Furthermore, in the insurance industry bidders received positive ARs and targets obtained negative ARs. Barniv and Hathorn (1997) stated that 73% of acquirers and sellers of merged insurers are other insurers. Also, as formerly outlined by Barniv and Hathorn, insurers are active in acquiring distressed insurers in order to overcome insolvencies, suggesting that regulators influence solvent insurers to acquire distressed insurers. Their results were that acquirers of distressed firms earned positive insignificant or negative significant CARs, while sellers received insignificant CARs. In this paper I found similar results with a sample of both undistressed and distressed firms. While for bidders our findings were significant, this could signify that the Canadian market values M&As in this field positively because of the few players in operation. Thus, by merging they would consolidate this industry and eliminate inefficient firms.

Tables 7 and 8 summarize abnormal returns estimates for bidders and targets, respectively, divided by year. As results in tables 5 and 6, the present tables also show that bidders received positive ARs for the complete period, while the targets' ARs were negative over the period. Also, abnormal returns whether positive or negative were not economically

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<sup>55</sup> The fifth transaction was a merger between BC Bancorp and Canadian Western Bank.

significant.

Under both methodologies in both tables, results were insignificant for the complete period, with the exception of bidders under OLS. On the other hand, when ARs were divided by years, we see that the significant results are towards the end of the 1992-1997 period for both bidders and targets. In table 7, when the SUR was used, no significant result by year was found. As for the OLS methodology, 1995 and 1996 were statistically significant at the 10% and 5% level respectively. In table 8, the targets showed similar results to the bidders with the exception of 1997, under the SUR, being significant.

$$R_{jt} = \alpha_j + \beta_j (R_{mt}) + \delta_j D_t + e_{jt}$$

Where...

j = Portfolio 19-24

Where....

19 = 1992 - Bidders

20 = 1993 - Bidders

21 = 1994 - Bidders

22 = 1995 - Bidders

23 = 1996 - Bidders

24 = 1997 - Bidders

**TABLE 7: Bidders' abnormal returns by year**

<b>BIDDERS<sup>56</sup></b>						
	<b>OLS</b>			<b>SUR</b>		
	ABNORMAL RETURNS	T-STAT	NUMBER OF FIRMS	ABNORMAL RETURNS	T-STAT	NUMBER OF FIRMS
1992	0.00053	0.578	5	0.00161	1.050	5
1993	0.00061	0.426	8	0.00160	0.618	6
1994	0.00091	0.361	10	0.00127	0.645	9
1995	0.00120	1.436*	9	0.00082	0.657	8
1996	0.00126	1.742**	19	-0.00016	-0.671	18
1997	-0.00074	-0.506	21	-0.00082	-0.111	19
Complete Period	0.00063	1.648**	72	0.00072	0.893	65

\*\* = Significant at the 5% level

\* = Significant at the 10% level

The latter two tables reveal two major patterns. First, when the results for bidders and

<sup>56</sup> The number of bidders and targets used in both methodologies, OLS and SUR, are different. The reason is that when estimating coefficients in the SUR methodology some acquisitions had to be deleted because of insufficient daily returns. Therefore, Shazam could not properly estimate the coefficients using the latter methodology. Thus, the number of bidders/targets was of 72/30 for the OLS and 65/27 for the SUR technique.

targets by year are compared, the numbers gives us different trends. Independently of the technique used, table 7 offers us positive ARs for bidders for the first 4-5 years, depending of the method used, then ARs become negative. In table 8, the same process exists but in the reverse for targets. In other words, the ARs are negative the first two years and then become positive. This dual pattern could be explained by the expansion of bigger firms into other lines of business. Thus, the market would perceive the opening of barriers in the industry as a winning situation for banks and insurance, and as a losing situation for smaller firms; i.e., trusts and security dealers. Then, because banks and insurance make up the vast majority of bidders they would receive positive returns the first years. The same happens for the investment companies and trusts that compose the targets side; they will then receive negative returns the first two years.

$$R_{jt} = \alpha_j + \beta_j (R_{mt}) + \delta_j D_t + e_{jt}$$

Where...

j = Portfolio 25-30

Where....

25 = 1992 - Targets

26 = 1993 - Targets

27 = 1994 - Targets

28 = 1995 - Targets

29 = 1996 - Targets

30 = 1997 - Targets

**TABLE 8: Targets' abnormal returns by year**

<b>TARGETS<sup>55</sup></b>						
	<b>OLS</b>			<b>SUR</b>		
	ABNORMAL RETURNS	T-STAT	NUMBER OF FIRMS	ABNORMAL RETURNS	T-STAT	NUMBER OF FIRMS
1992	-0.0214	-0.810	4	-0.0196	-0.913	2
1993	-0.0096	-0.910	3	-0.0120	-1.416	3
1994	0.0004	0.292	3	0.0004	0.474	3
1995	0.0010	0.585	5	0.0018	0.959	5
1996	0.0030	1.581*	7	0.0023	0.736	6
1997	0.0029	1.561*	8	0.0037	1.839*	8
Complete Period	-0.0040	-0.939	30	-0.0039	-0.685	27

\* = Significant at the 10% level

However, following these first years, bidders achieved negative ARs the last two years, while targets obtained positive ARs following the two years of bad outcomes. This change could be explained by the big banks and insurance companies now buying less profitable targets. Having received good “values” in the past they continue to pursue a strategy that is now not as valuable as in former years. On the other hand, for the targets the story is the opposite. The year 1997 is the year where there was the greatest number of M&As in the financial services industry<sup>57</sup> (see Table 1) over the period 1992-1997 representing a value of \$14.7 billion. This means that the Canadian financial services industry was going through incredible turmoil. A transaction was done every 2.6 days. Firms were actively buying, and new deals were a common thing. So, it was a ‘target market’ out there. Big firms wanted to become bigger and they did not want to miss out on any opportunity. Therefore, they were buying quickly and sometimes at a too high of a price. Targets’ shareholders were benefiting from all of this turbulence and this is shown by positive ARs for the 1994-1997 years and especially in 1996 and in 1997.

The second trend shows us that when significance is examined, only the last years of tables 7 and 8 are significant. This could be explained by two factors. First, the market might have anticipated transactions that occurred during the first few years following deregulation. Therefore, the price already incorporate the possible synergies created by the merger. Then, no ARs were found as significant. However, as years passed possible transactions of M&As were becoming more difficult to determine and therefore to anticipate. In other words, it was more difficult for the market to predict which bidder would acquire which potential target and as the

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<sup>57</sup> The number of deals in 1997 was of 139.

transactions were announced the prices immediately incorporated the total ARs. Consequently, since the ARs were incorporated into the price in a few days, instead of a few weeks or a few months, they were significant. The second factor is the level of M&A activity. As seen in tables 1, 7 and 8, the level of M&A activity is highest in 1996 and 1997, and we observe significant ARs during those years.

Finally, out of this section, two important results were found that need to be addressed with a more precise and descriptive analysis. These two results are the following. First, the main one is to have found significant positive ARs for bidders, under OLS, while ARs for targets were negative. This finding goes against practically all of the literature in the M&As field. Normally, bidders are found to obtain negative significant ARs while the targets get positive significant ARs. Therefore, what were the reasons that created a favorable environment for the acquirers in this industry to obtain positive returns? And the second result was to have found a negative average daily return for the Targets/Trusts portfolio during the 1992-1997 period (see Table 6). What were the reasons that made this specific pillar to receive an average negative daily return when all of the other three pillars, whether on the bidder or on the target side, got positive average daily returns. To have a better comprehension of possible explanations of the latter two results, the following section will portray a more descriptive image of the industry's performance since deregulating in 1991.

### **6.3 Characteristics of the Canadian Financial Services Industry by 1997.**

Since deregulation in 1991, the fourth pillars are now regrouped, to a large extent, into one single market. All financial institutions are now able to compete in every sector. There are

still a few big independent firms in the trust and in the investment pillars, but the banks dominate in each of those sectors. For example, in 1997 the banking sector held 44% of the total assets (national assets + foreign assets) of the financial industry. As for the six biggest banks, in 1997 they controlled 86% of the total national assets in the banking sector (Table 9); 50% of the net income and 59% of total deposits of the financial services industry.

**TABLE 9: Concentration of the Banking Pillar in 1997**

<b>Banks</b>	<b>Average Assets (Billions of CDN dollars)</b>	<b>Market Share (%)</b>
Royal Bank	163	20
C.I.B.C.	137	17
Bank of Montreal	109	14
Bank of Nova Scotia	106	13
TD Bank	101	13
National Bank	55	7
<b>Total 6 Biggest Banks</b>	<b>667</b>	<b>86</b>
<b>Total Banking Pillar</b>	<b>776</b>	

Source: McKinsey & Company, 1998, *The Changing Landscape for the Canadian Financial Services: New Forces, new competitors, new choices*, 2-11.

However, the banking pillar does not control every inch of the industry. In the life insurance and the asset management sectors, independent firms dominate the market, while the banks have a relatively small market share. Also, deregulation has dramatically changed the nature of the financial industry in the last years. This federal legislation recognized what had long been evident in the market: the traditional trust and bank pillars had effectively merged into a single deposit-taking sector. When deregulation came into effect, banks and trusts were now facing intense competition from the mutual funds due to lower interest rates in deposits. Individuals were now more aware of the investment products and possibilities offered in the market. In the few last years, investors neglected conventional deposits and transferred their money into mutual funds and wealth management firms. In fact, since deregulation the

investment dealers have almost replaced banks and trusts as the traditional suppliers of personal savings products (see Table 10).

We see in Table 10, that for the trusts the decline in personal deposits has been terrible, representing 58% between 1991 and 1997 with the largest reduction occurring between 1991 and 1993. At their peak between 1988 and 1991, trust companies accounted for about 22% of deposits in Canada [Mackay (1999)].

**TABLE 10: Personal Savings by Type of Institution (\$ billion)**

	Bank Personal Deposits	Trusts Personal Deposits	Mutual Funds
1991	216.5	114.7	49.9
1992	228.7	113.3	67.3
1993	263.8	79.5	114.6
1994	280.3	68.7	127.3
1995	297.5	64.4	146.2
1996	292.4	62.9	211.8
1997	290.3	48.2	283.2

Source: Mackay Report, 1999, Competition, Competitiveness and the Public Interest, p.43

During the 1980s and early 1990s, there was failure of a number of large and smaller trust companies. This could explain the transfer of deposits from the trusts to the mutual funds and/or banks. It could also explain the negative average daily returns obtained by the Targets/Trusts portfolio in Table 6. Also, when we look at Table 8, we see that the negative returns are concentrated in years 1992 and 1993, and not surprisingly portfolios in those years were mainly composed of trusts: in 1992, three firms out of four were trusts, while in 1993 only one out of three was a trust. It would appear that these negative returns were created by the trusts and were a consequence of declining deposits and failures in the industry.

Moreover, since deregulation the trust pillar has decreased in not only size but also in importance. Actually, banks bought trusts that did not fail in the early 90s. By 1997, the

dominant firm in the trust pillar that could have had a certain impact on the industry was CT Financial Services Inc. Appendix 5 clearly shows that it was Canada Trust that created growth in its sector for the 1992-1997 period. In February 2000 CT Financial Services was acquired by TD Bank.

As for the banking sector, we have seen that they now have competition under their own turf. In McKinsey's (1998) analysis of the market, they determined that the four pillars were competing for 19 billion dollars of net income. This profit is mainly divided into three sources: the Personal Financial Services (PFS), the Commercial Banking Operations (CBO), and the Life Insurance business (LI). The largest business comes from the PFS, representing 69%; the CBO comes in second with 24% of the market and finally, the LI represents 7%.

**TABLE 11: Sources of Net Income Divided into Concentration/Pillar**

SEGMENT		NET INCOME (billions \$)	ROE (%)	BANKS CONCENTRATION	MAJOR PLAYER
<b>PFS</b>	Mortgage Loans	2.8	20-30	53	Banks
	Personal Loans	1.0	10-15	62	Banks
	Credit Cards	1.0	30-40	63	Banks
	Deposits	6.5		59	Banks
	Asset Management	1.7	15-25	23	Mutual Funds / Asset Mgmt Cos
		13.0			
<b>CBO</b>	Commercial	1.7	0-15	76	Banks
	Banking Services/Brokerage	1.0	10-20	70	Banks
	Pension Fund and Annuities	1.8	8-10	15	Independents
		4.5			
<b>LI</b>	Insurance (Life & Health)	1.4	8-12	42	Insurance

Source: McKinsey & Company, 1998, The Changing Landscape for the Canadian Financial Services: New Forces, new competitors, new choices, 2-23.

As Table 11 shows, the banking pillar is a major player in practically all of the segments with a few exceptions as stated earlier. On the other hand, when we take into account the PFS and the LI segments, banks accounted for less than half (46%) of the net income of these two



segments. This number is quite surprising considering the high market shares of banking (more than 50%) in mortgage and personal loans, credit cards and deposits. When the CBO segment is considered, the banks have a market share of 60% when we do not include pensions. When pensions are included, the market share drops to a 44%.

As for the investment dealers' pillar, they have increased substantially in the last few years. In fact, as shown in Appendix 5 and in Table 2, the AWMV of the investment dealer's portfolio increased 5.6 times between 1992-1997. Not only have the security dealers increased in size, but many more are now publicly traded, although, from 1987 to 1997 the major banks bought the biggest stockbrokers in the country. Consequently, by 1997 the banks held 70% of the market share, previously held by the security dealers. The other 30% is held by independents such as Midland Walwyn (the largest).

The asset management segment is dominated by independents such as Trimark and Investors Group. What is interesting about this 'new' pillar it is not its size or its relative concentration in the market, but rather its tremendous growth in the last five years (1992-1997). Because of the bull market in the last few years and also the common investor demand for higher returns than traditional deposits, the assets under management for these institutions increased at a growth rate of 33% per year for institutional investments and 20% per year for individual investments.

As for the LI segment, the insurance pillar dominated this business with 58% of the market share. However, an important fact to point out, is that even if the life insurance firms in Canada had a growth rate of 10.7% per year for the 1987-1997 period, their recent expansion in 1992-1997 is not due to the life insurance business, but rather to their entry into the PFS

business since 1992. In fact, the numbers in Table 2 and in Appendix 5 clearly show the great growth of insurers since deregulation. This is mainly due to expansion into other lines of business and consolidation in the industry.

Finally, Canadian institutions have two choices to be able to control their destiny without regulatory protection. First, they can considerably increase their performance with resources they already have. Or second, they can increase their size substantially while keeping constant or increasing their performance. Financial institutions in Canada have realized that it was easier to grow and at the same time answer to the market's expectations by proceeding with M&As transactions rather than by growing internally [McKinsey (1998)]. That is why following deregulation the financial services industry in Canada has experienced so many mergers and acquisitions. The market perceived, in general, these transactions as positive given the increased competition. By these transactions inefficient firms would be bought or would simply fail if not bought. Therefore, the larger bidders were in a stronger position than the targets because they had many possibilities to choose from. The targets were smaller and not as efficient as the bidding firms. The purchases made by the bidders were viewed by the market as positive, in order to eliminate inefficiency and increase market share, in a highly competitive market. Thus, the targets probably received negative ARs because having no choice they probably accepted lower prices for their acquisition.

## **7. CONCLUDING REMARKS**

In general the mergers and acquisitions literature in the financial services industry indicates that on average there is no creation of wealth. In the present study, I examined how the deregulation of the Canadian financial services industry impacted the four pillars of the industry, and the impact of deregulation on the mergers and acquisitions completed in the post-deregulatory period of 1992-1997. The influence of the deregulatory process on the latter industry was analyzed following two steps. First, the potential risk shift between the deregulatory period of 1984-1991 and the post-deregulatory period of 1992-1997 was tested using the Gujarati (1970) switching regression. Secondly, the wealth created by the M&As in the Canadian financial services industry was assessed using the event study methodology.

When the risk was evaluated, results revealed that the industry as a whole had a higher beta risk in the post-deregulatory period. However, when results were divided by pillar, the risk for the banks decreased while for the other three pillars it increased. The larger betas for the insurance, the trusts, and the investment industry is consistent with Peltzman (1976) who suggested that less regulatory protection will amplify the volatility of the firm's returns, and as a consequence will increase their beta risk. In addition, when risk shifts were separated by year in the post-deregulatory period all were positive but insignificant for the financial services industry, except for 1992 and 1993. This last result is still consistent with Peltzman. The insignificant shifts in subsequent years suggest that the industry learned from its adaptation period as suggested by Dickens and Philippatos (1994). Again, when results were examined by year for each pillar, the results still indicate a trend of lower levels of risk for the banks whereas the risk was higher practically every year in the post-deregulatory period for the other tree

pillars.

When testing for creation of wealth the OLS and the SUR methodology were used to test if M&As created gains to the bidders and/or the targets. Results showed that bidders did not achieve significant ARs for any of the pillars, with the exception of the insurance portfolio and the All firms portfolio under the OLS technique. On the other hand, the targets received negative ARs, under both methodologies, for the All firms portfolio. However, when divided by pillar, the only ones to have received significant positive ARs were the banks; the other three pillars had negative, but insignificant, returns. Furthermore, when the ARs of both bidders and targets were divided by years, results showed that bidders received significant positive ARs for the complete post-deregulation period under OLS, while the targets side earned insignificant negative ARs. But, when the ARs by year were reviewed, the significant ARs were towards the end of the post-deregulatory period for both bidders and targets.

To sum up, throughout the process the banks decreased their risk while their takeover activity created positive gains whether they were on the bidder or on the target side. As for the insurance companies, their risk increased throughout deregulation and their M&As created positive returns when they were on the bidders side but negative on the targets side. The trusts had no gains from takeover transactions on both sides and their risk increased. The security dealers saw their risk increase in the post-deregulation period, and, when they were on the targets side gains were positive but negative when they purchased other firms. Finally, the significant positive ARs from M&As were created at the end of the 1992-1997 period for both bidders and targets.

Two limitations to this research need to be discussed. First, there is the thin trading

problem inherent in the Canadian system. Second, when working in the Canadian financial industry I encountered the obstacle of reduced data. Unluckily, few public firms had sufficient data to be included in this study. These two characteristics of the data may limit the generalizability of the results.

Mitchell and Mulherin (1996) pointed out that corporate takeovers such as M&As are more often least-cost ways for an industry to respond to changes such as deregulation. In fact, they have found that takeovers do not occur evenly on time, but instead they cluster in waves. In their study covering 51 industries over the 1982-1989 period, Mitchell and Mulherin found that 50% of the takeovers in a given industry clusters within a 2-year period. Also, they have discovered that industries with the greatest activity of corporate takeovers are the ones going through a deregulation, technological advancements etc. When we compare their results to the Canadian financial industry, we observe that during the post-deregulatory period of 1992-1997 (see Table 1), 42% of corporate takeovers happened in a short period of time of two years; i.e., from 1996 to 1997. Furthermore, it was around these years when the ARs were significantly positive. Therefore, the market saw in these takeovers an effective means for the financial industry to respond to the deregulatory process.

On the other hand, M&As that occurred in the early years of the 1992-1997 period were not necessarily bad transactions. Stock price event studies may sometimes be poor measures of performance if the market already anticipated the merger prior to the announcement. In other words, just as the complete deregulation was finalized on December 1991, the market might have anticipated some key takeovers that would take place in the first few years of the newly deregulated environment. In that case, the price would automatically

reflect all of those anticipations and no positive ARs would then be found at the announcement date. Or the market might have negative reactions to some takeovers because these acquisitions might of ruined expectations of even more efficient mergers. In other words, these negative returns are not related to the inefficiency of the announced acquisition, but rather they represent the missed opportunities of a more efficient transaction [Calomiris (1999)].

Still, if the event study measured the post-merger gains from the merger transaction, Calomiris (1999) explains that this is not the correct data to determine the long-term gains from the merger. He believes that the information of interest would be to verify if the inefficient transactions were permanent. In other words, if acquisitions that resulted in negative ARs were short-lived. Then, these acquisitions should be viewed as successes. Calomiris says that if we fail to research takeover activity over time within a firm, and only consider successes of failures individually, then we will have difficulty interpreting the real impact of takeovers on the firm.

An alternative approach would be to use a case study methodology instead of the generally employed statistical methodologies. Studies using the case approach, as well described by Pilloff and Santomero (1997)

...Investigate the fixed costs associated with the transition to a merged entity, the time and the effort needed to downsize, restructure and close redundant production facilities, and management's attention to aggressively slashing expenses. They seek to understand where merged institutions quickly align their practices to least cost procedures and where they do not. They separately estimate transition costs, and gains from long

term operating efficiency accruing to the combined organization. In fact, one of the goals of these studies is to separate these two features of any merger. They also study the process and timing issues surrounding the convergence to a single operating environment, as it is well known that the gains from the mergers materialize more quickly when the process of transition is completed early...(section 6).

Because the bulk of empirical research did not show great evidence of efficiency gains from takeovers in the financial industry, the latter approach may provide some broad patterns or insights that we do not presently have. Some firms succeed while others fail in their M&As, perhaps the case approach will help to identify important factors leading to success or failure.

Future research in the Canadian financial industry needs to address several other issues. First, a challenge when testing for the systematic risk shift would be to change the switch point to previous dates in order to identify when the market's expectations changed due to the deregulation process. Second, examining if there was beta instability within each period, 1984-1991 and 1992-1997, could extend the analysis of the risk shift. Finally, not only the case-by-case approach could be used to better understand the takeover activity in Canada, but also to explore the takeover patterns of successes and failures across the Canadian financial industry.

## APPENDIX 1

### *21 Major events leading to the deregulation of the Canadian Financial Services Industry and to Free Trade<sup>a</sup>.*

Event	Date	Description
1.	Nov. 8, 1984	'A New Direction for Canada: An Agenda for Economic Renewal'. Federal Government announced its intention to work with the provinces, the public and the financial community to develop regulation that would reform the financial system.
2.	Dec. 14, 1984	Allan Taylor, president of Canada's largest bank, the Royal Bank, announces that the banks will not lobby for changes in the Bank Act unless the scope of the activities of non-banks is widened.
3.	Feb. 19, 1985	Ontario Securities Commission proposal dealing with entry into and ownership of Ontario securities industry. It proposed to increase the ownership of securities dealers by resident and non-resident firms.
4.	Feb. 25, 1985 <sup>b</sup>	Donald McDonald, chairperson of the committee set up by Federal Government to examine Free Trade, announces support for policy.
5.	Mar. 9, 1985	Minister of Finance, Barbara McDougall, hints that changes to legislation governing financial institutions may have to wait several years.
6.	Apr. 15, 1985	'The Regulation of Canadian Financial Institutions: Proposals for Discussions', a Federal Government 'green paper' which proposed the introduction of financial holding companies whereby non-banks could own trust firms, insurance companies and banks of limited size.
7.	Sept. 19, 1985	The three largest international mutual life insurance companies in Canada present a brief to the House of commons Finance committee contending that the proposed legislation discriminates against them relative to domestic insurers. The 'Green Paper' recommended that domestic insurers be allowed to own up to 30% of banks whereas foreign insurers would be restricted to 35% ownership.
8.	Nov. 6, 1985	The House of Commons Standing committee on Finance and Economic Affairs released its report on Canadian Financial Institutions. The committee recommended that non-bank financial institutions own trust and insurance companies both directly and through holding companies.
9.	May 1, 1986 <sup>b</sup>	Trade Minister announces date that Canada-U.S. Free Trade talks will open.
10.	Oct. 6, 1986	The first reading in Parliament of Bills C-8 and C-9. Bill C-8 was meant to amend the Canadian and British Insurance Companies Act, the Foreign Insurance Companies Act and the Winding-up Act. Bill C-9 was to amend the Loan



		Companies Act, the Trust Companies Act, the Bank Act and the Quebec Savings Act. The bills proposed regulatory changes whose general policy direction was described in the December 18, 1986 Federal Government White Paper.
11.	Dec. 18, 1986	'New Directions for the Financial Sector', a Federal Government proposal on the new regulation of financial institutions to meet the need for internationalization, competition, and improved corporate governance, and to strengthen solvency of the financial institutions.
12.	Apr. 28, 1987	Ontario government and Federal government signed the Hockin/Kwinter accord which established jurisdiction as to who should regulate securities dealers in the event they are acquired by federally incorporated financial institutions.
13.	June 30, 1987	Both the House of Commons and the Senate approved Bill C-56. Federal government allowed federally chartered financial institutions and foreign investors to own 100% of securities dealers.
14.	Oct. 3, 1987 <sup>b</sup>	Tentative Free-Trade agreement signed by Canadian Government.
15.	Dec. 21, 1987	The Federal government releases draft legislation that amends the Trust and Loans Companies Acts to relax restrictions on commercial and consumer lending but prohibits firms from retailing non-creditor insurance through branches.
16.	May 24, 1988 <sup>b</sup>	Federal Government gives first reading of Free Trade Legislation in the House of Commons.
17.	June 15, 1990	Minister of Finance, Michael Wilson, states that he will not impose limits on ownership of trust companies.
18.	Sept. 27, 1990	The Federal government gives first reading of a bill to the House of Commons to amend the Trust companies Act and the Loans Companies Act. This bill is mostly unchanged from the 1987 draft legislation.
19.	Dec. 19, 1990	The Federal government gives first reading to a bill to amend the Bank Act. Banks would be allowed to own trust and insurance companies. Banks would be prohibited from selling non-creditor insurance through branches.
20.	June 19, 1991	The Federal government gives first reading to a bill to amend the Insurance Companies Act in House of Commons. The bill will allow insurance companies expanded personal and commercial lending powers and the ability to own banks.
21.	Dec. 9, 1991	The House of Commons passes the bills to amend the Trust and Loans Companies, Bank and Insurance Companies Acts.

<sup>a</sup> Source: Amoako-Adu and Smith (1995)

<sup>b</sup> Major events related with the Free Trade Agreement between Canada and the U.S.A.

## **APPENDIX 2**

### **Accounting Data**

Merger participants allege all sorts of merger-related gains; cost efficiency obtained through scale and scope economies, are often quoted by many firms. Copeland and Weston (1988) define economies of scale as "*...indivisibilities, such as people, equipment, and overhead, that provide increasing returns if spread over a larger number of units of output...P.684*". In other words, economies of scale exist whenever an increase in the scale of production, marketing or distribution results in a less than proportional increase in cost. Thus, the presence of these economies reveals that there are inherent cost advantages of being large. On the other hand, scope economies exist whenever the same investment can support multiple profitable activities less expensively in combination than separately.

Scale efficiency literature suggests that medium-size firms are more efficient than very large or very small firms [Humphrey (1990)]. This is explained by an empirical U-shape cost curve. The scale efficient point in recent literature ranges from \$100 million to \$10 billion of assets. Nevertheless, a recent study from Berger and Mester (1997), using data from 1990 to 1995, did observe economies of scale for banks up to \$25 billion of assets. However, using this methodology has two shortcomings. First, the functional form used in various studies [Hunter and Timme (1986,1991)] may not be capable of incorporating the technologies of both large and small banks. Second, it may also exclude from the model some important factor that varies with bank size.

In McAllister and McManus 1993 study, they showed that existing literature presents the two latter shortcomings. First, using the translog cost function gives a poor approximation when applied to banks of all sizes. Since, it forces small and large banks to lie on a symmetric U-shaped average cost curve; therefore, it disallows for other possibilities. A way around this problem, as suggested by McAllister and McManus, is to replace the translog function by one of many nonparametric estimation procedures. The major advantage of the latter technique is that it requires no *a priori* restrictive functional form for the cost function and can handle zero output values (which has been the major limitation of the popular translog stochastic model used in bank cost studies). Nonetheless, the limitation of this methodology is its nonparametric nature; the technique does not take into consideration random effects in measuring efficiency/inefficiency [Grabowsky et al. (1994)]. Furthermore, McAllister and McManus incorporated in their calculations of scale efficiency - the risk factor. As bank scale increases it creates a financial scale economy. By taking into account risk, McAllister et al. showed that as bank loan portfolios increase in size up to about \$1 billion, the standard deviation of the rate of return falls precipitously, presumably because of diversification benefits. The second problem detected is that most studies do not use a frontier estimation technique. So, because theoretically these economies apply only to the efficient frontier (EF), using data from firms off the EF may confound scale efficiencies with differences in X-efficiency. However, McAllister et al. found only small differences between scale efficiencies on and off the EF.

Prior literature on scope efficiency reveals three major problems. First, when testing for scope economies we compare the cost outputs of two specialize firms versus the cost production of a single firm. The translog function is often used to test if these economies exist.

However, this method has the bad habit to be multiplicative in the outputs. Therefore, by doing so the translog function has the property to predict costs of zero. Therefore, it imposes extreme scale diseconomies on any data set. Second, in the banking industry there is often little or no data of firms that specialize. All firms, in the financial services industry, produce the entire range of products specified in the cost function. This can create potential problems of extrapolation, combined with the translog effect it can provide erratic measures of scope economies and diseconomies [Berger and Humphrey (1991)]. Finally, as scale economies, scope economies are only defined on the EF and, using data that is not on the EF becomes a major problem for measuring scope efficiency because we can confound these economies with X-efficiencies. However, as opposed to scale economies, empirical research indicates that this is a major problem in detecting scope economies.

Bypassing these issues can be done as follows. Instead of using the translog method, some studies used the Box-Cox transformation, which does not behave so poorly at or near zero output. Unfortunately, the latter method yielded properties similar to the translog function. For the second issue, a few studies used the expansion path subadditivity (EPSUB) [Berger and Humphrey (1991)]. By combining the scale and product mix effects of moving from each size class mean to the mean of the next class, this method provides more reasonable representation of the opportunity of existing banking firms to change their outputs than scope economies. By doing so, the latter procedure avoids the question of scope economies, in itself, and leans toward a more interesting question of whether efficiency can be improved by changing scale and product mix simultaneously. Finally, in Berger, Hancock and Humphrey's (1993) paper, they utilized the profit function instead of the cost function. Their 'optimal scope

economies' provides insights not available from the conventional scope economy concept; not only it is output-efficient, but also input-efficient.

While scale and scope efficiencies have extensively been studied, less focus has been given to X-inefficiencies, i.e. deviations from the EF. X-efficiency refers to the fact that given a current volume of output, a firm is not operating with maximum cost efficiency. In other words, the firm has a too high cost structure. X-efficiency appears to be a much more important source of efficiency compared to scale and scope. For that matter, research suggests that X-inefficiency represents 20% or more of costs in banking, while scale and product mix inefficiencies account for less than 5% of total costs. In fact, in a survey of 130 studies across 21 countries, Berger and Hanweck (1998) showed that X-inefficiencies were in the order of 20-30% of total costs.

Four different approaches have been used across studies. The econometric frontier approach (EFA), the thick frontier approach (TFA), the data envelopment analysis (DEA) and the distribution-free approach (DFA)<sup>58</sup>. Each of these approaches has different set of assumptions about the probability distributions of the X-efficiencies and the random errors. Each of these frontier methodologies involves estimating econometrically an efficient cost frontier for a cross-section of banks. For a given institution, the deviation between its actual costs and the minimum cost point on the frontier, corresponding to an institution similar to the

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<sup>58</sup> EFA assumes that inefficiencies follow an asymmetric half-normal distribution, random errors follow a symmetric normal distribution, and that both are orthogonal to the cost function exogenous variables [Ferrier and Lovell (1990)]. TFA assumes that deviations, from predicted costs within the lowest average-cost quartile of banks in a size class, represent random error, while deviations in predicted costs between the highest and lowest quartiles represent X-inefficiencies [Berger and Humphrey (1991)]. DEA assumes that there are no random fluctuations, so that all deviations from the estimated frontier are inefficiencies [Ferrier and Lovell (1990)]. Finally, DFA assumes the efficiency differences are stable over time, while random error averages out over time [Berger et al. (1993)].

bank in question, measures X-efficiency. Because the choice of a method strongly affects the level of measured inefficiency, it becomes difficult to determine which one describes better the true nature of the banking data. Even when using the same data set, rankings of individual banks often do not correspond well across methods, although the four methods provides similar average efficiency levels.

Nonetheless, in Berger, Hancock and Humphrey's (1993) study, they found that larger firms are substantially more X-efficient on average or closer to the frontier, than smaller firms are. This finding may offset some of the scale diseconomies found for the largest banks in cost studies. Conversely, in a previous paper studying bank mergers, with at least \$1 billion in assets that occurred in the 1980's, no X-efficiencies gains were found [Berger and Humphrey (1992)]. Thus, Akhavein et al. (1997), using the same data set as the earlier research, analyzed changes in profitability and found that revenue efficiency improved following mergers. Grabowski et al. (1994) studied the 1983 deregulation impact on 669 banks using pre- and post-deregulation data, 1979 and 1987 respectively. They concluded that deregulation did not have strong favourable effects on the economic efficiency of banks. DeYoung (1993) investigated 348 mergers' cost efficiency for the period 1986 to 1987. Although no efficiency gains were found, they discovered, however, that when the target and the bidder are poor performers, merger activity resulted in improved cost efficiency.

Using DEA methodology, in the U.S. life insurance industry, to assess cost and revenue (C&R) efficiency, Cummins et al. (1999) major result was that acquired firms achieved greater gains in C&R efficiency than non-merged firms; with cost efficiency gains imputed

essentially to gains in technical rather than in allocative efficiency<sup>59</sup>. As other conclusions, they found that more efficient firms are more attractive merger targets. Nevertheless, acquirers may regard the target's success in its product market as a more important aspect rather than its cost or its technical efficiency. For that matter, acquirers may consider making internal improvements simpler, than replicating a competitive advantage to generate revenue. As well, targets with non-decreasing returns to scale are more likely to be acquisition targets. This implies that acquiring insurers generally act rationally by avoiding firms that are already too large.

Peristiani's (1997) paper examined post-merger performance using DFA methodology for all 4900 individual transactions that occurred from 1980 to 1990. Banks that participated in mergers suffered greater X-efficiency losses 2 to 4 years after consolidation, than their non-merged counterparts. As for other results, the distribution of X-efficiency is quite constant across banks, except for large banks (more than 10 billion in assets), which are found to have poorer X-efficiency. Moreover, the study found that the optimal bank size is around \$800 million, and also that the more scale inefficient banks are the small ones (less \$100 million) and the very large ones (more than \$10 billion). To conclude, non-merging banks have achieved considerable improvements in scale efficiency over the period, however, merged banks obtained higher efficiency. Therefore, we can deduce that during the period 80-90, there was an industry effort to improve cost efficiency, and M&As activity was one tactic use to achieve it.

Additionally to the employment of frontier methodology, AD can serve to construct

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<sup>59</sup> **Technical inefficiency** arises when firms are not using the most efficient technology. **Allocative inefficiency** happens when a cost minimizing input mix procedure is not in place.

standard corporate finance measures; i.e. corporate ratios. Benston et al. (1995) developed a simple model of acquiring banks' bidding prices for other banks, in order to determine key factors that define the latter prices. They compared two opposing views: the 'Earnings Diversification Hypothesis'<sup>60</sup> and the 'Deposit Insurance Put-Option Hypothesis'<sup>61</sup>. Their results demonstrated that acquiring banks seek earnings diversification. In other words, the bidding firm will offer a higher price for merger partners that offer superior potential of cash flow enhancements as a result of earnings diversification. Rosen et al. (1989) studied if the entrance of bank holding companies (BHC) into real estate activities, between 1980 and 1985, was a potential risk-reduction diversification strategy. Using portfolio theory, with returns from financial statements of 319 commercial banks, and market returns for real estate from two different data sets, they found minimal diversification potential. In this manner, maximal risk reduction is obtained when real estate investment attains no more than four percent of total assets.

Rhoades (1993) analyzed efficiency of 898 horizontal mergers<sup>62</sup> that took place between 1981 and 1986. He used horizontal amalgamations, because it is often argued that this type of transactions are the ones that should obtain higher efficiency gains, due to office overlap and to a bidding firm being more efficient than its target. In these two respects, these mergers satisfied both conditions. However, a reduction in post-merger

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<sup>60</sup> The 'Earnings Diversification Hypothesis' asserts that acquirers seek earnings diversification in an effort to generate higher levels of cash flow for the same levels of total risk.

<sup>61</sup> The 'Deposit Insurance Put-Option Hypothesis' states that buyers aspire to become larger in order to become too big or important to fail. Also, this hypothesis suggests that the acquirer is willing to pay more for a riskier and more profitable target that has high correlated returns with its returns.

<sup>62</sup> Rhoades post-merger data are from the fourth to sixth year following the merger. The following procedure is to guarantee that his data had time to fully incorporate the impact of the merger; i.e. to achieve reductions in operating costs.



costs does not necessarily mean that the firm is more efficient. Maybe costs reductions are accompanied by a decrease in assets, which represents a contraction in the firm's size instead of improvements of its efficiency. The results demonstrated that merged firms did not decrease expenses relative to other firms. Also, that a high level of overlap did not improve efficiency. Finally, rapidly growing firms had total expense ratios that increased quicker than slower growing firms.

**APPENDIX 3**

Sector	Canadian Standard Industrial Classification Codes	American Standard Industrial Classification Index
BANK COMPANIES	7021: Chartered Banks	6022: Provincial Banks 6025: Federal Banks
INSURANCE COMPANIES	7311: Life Insurers 7321: Deposit Insurers 7331: Health Insurers 7339: Other Property and Casualty Insurers	6311: Life Insurance 6321: Accident and Health Insurance 6324: Hospital and Medical Service Plans 6331: Fire, Marine, Property and Casualty Insurance 6351: Surety Insurance 6361: Title Insurance 6371: Pension, Health, and Welfare Funds 6399: Insurance Carriers 6411: Insurance Agents, Brokers and Services
TRUST COMPANIES	7031: Trust Companies 7051: Local Credit Unions 7124: Financial Leasing Companies 7129: Other Business Financing Companies	6042: Trust Companies 6052: Foreign Exchange Establishments 6054: Safety Deposit Companies 6100 (Complete Section): Credit Agencies-Except Banks
INVESTMENT COMPANIES	7211: Investment (Mutual) Funds 7212: Retirement Savings Funds 7411: Investment Dealers 7412: Stock Brokers	6200 (Complete Section): Security and Commercial Broker Services 6722: Management Investment Offices, Open-End 6723: Management Investment Offices, Closed-End 6724: Unit Investment Trusts

## **APPENDIX 4**

*Firms used by period in the analysis of risk change*<sup>63,64</sup>

Number	Name	Ticker	84-91	92-97
<b>BANKS</b>				
1	Bank of Montreal	BMO	×	×
2	Bank of Nova Scotia	BNS	×	×
3	C.I.B.C.	CM	×	×
4	Laurentian Bank	LB	×	×
5	National Bank	NA	×	×
6	Royal Bank	RY	×	×
7	Toronto-Dominion Bank	TD	×	×
			7	7
<b>INSURANCE</b>				
8	Consolidated SYH Corporation	CZY	×	
9	Equisure Financial Network Inc.	EFN		×
10	Fairfax Financial Holdings Ltd.	FFH	×	×
11	Goran Capital Inc.	GNC		×
12	Great-West LifeCo Inc.	GWO		×
13	London Insurance Group Inc.	LON		×
14	Reed Stenhouse Companies Ltd.	RSS.S	×	
			3	5

<sup>63</sup> For firms to be incorporated for either period, they had to have a minimum of 50% of returns available for each period.

<sup>64</sup> The number of observations per period needs not to be equal [Gujarati (1970)].

<b>Number</b>	<b>Name</b>	<b>Ticker</b>	<b>84-91</b>	<b>92-97</b>
<b>TRUSTS</b>				
15	CT Financial Services	CFS (1)	×	×
16	Gentra Incorporated	GTA	×	×
17	Home Capital Group Inc.	HCG.B	×	
18	Hees International Bancorp Inc.	HIL	×	
19	Landmark Global Financial Corp.	LMK	×	×
20	National Trust Company	NT	×	×
			<b>6</b>	<b>4</b>
<b>INVESTMENT DEALERS</b>				
21	AGF Management Limited	AGF.B	×	×
22	BGR Precious Metals Inc.	BPT.A	×	×
23	Central Fund of Canada Ltd.	CEF.A	×	×
24	Canada General Investments Limited	CGI		×
25	CSA Management Inc.	CSA.A	×	×
26	Consolidated Canadian Express Ltd.	CXE		×
27	Dundee Bancorp Inc.	DBC.A		×
28	Fahnestock Viner Holdings	FHV.A	×	×
29	First Marathon Inc.	FMS.A	×	×
30	Mackenzie Financial Corporation	MKF	×	×
31	Sceptre Investment Counsel Ltd.	SZ.A		×
32	Edper Group Limited	TEG.A	×	×
33	United Corporations Limited	UNC	×	×
			<b>9</b>	<b>13</b>

## APPENDIX 5

### Average Weighted Market Value (AWMV) - 1991

		Shares Outstanding <sup>1</sup>	Price <sup>1</sup>	Market Value [MV <sub>UNIT</sub> ]	MV <sub>UNIT</sub> /MV <sub>TOTAL</sub> PORTFOLIO	(3) * (4)
		(1)	(2)	(3)	(4)	(5)
<b>BANKS</b>	Bank of Montreal	120,158,264	43.75	5,256,924,050	17%	872,475,136
	Bank of Nova Scotia	201,072,897	21.63	4,348,201,398	14%	596,910,140
	C.I.B.C.	183,703,837	34.38	6,314,819,397	20%	1,258,958,814
	Laurentian Bank	15,500,000	19.50	302,250,000	0.95%	2,884,179
	National Bank	127,031,477	11.75	1,492,619,855	5%	70,337,687
	Royal Bank	306,419,440	27.63	8,464,837,030	27%	2,262,178,427
	Toronto-Dominion Bank	301,089,886	18.25	5,494,890,420	17%	953,252,002
	<b>MV<sub>TOTAL PORTFOLIO</sub></b>			31,674,542,149	100%	
<b>AWMV</b>					<b>6,016,996,386</b>	
<b>INSURANCE</b>	Consolidated SYH Corporation	1,767,000	0.22	388,740	0.25%	987
	Equisure Financial Network Inc.	n/a				
	Fakfax Financial Holdings Ltd.	3,907,297	21.25	83,030,061	54%	45,033,298
	Goran Capital Inc.	n/a				
	Great-West LifeCo. Inc.	n/a				
	London Insurance Group Inc.	n/a				
	Reed Stenhouse Companies Ltd.	2,964,584	23.5	69,667,724	46%	31,704,892
	<b>MV<sub>TOTAL PORTFOLIO</sub></b>			153,086,525	100%	
<b>AWMV</b>					<b>76,739,177</b>	
<b>TRUSTS</b>	CT Financial Services	118,889,539	19.75	2,348,068,395	42%	992,542,205
	Genra Incorporated	152,622,767	8.00	1,220,982,136	22%	268,377,508
	Home Capital Group Inc.	7,915,995	1.25	9,894,994	0.18%	17,626
	Hees International Bancorp Inc.	80,322,177	14.88	1,194,792,383	22%	256,987,729
	Landmark Global Financial Corp.	26,867,296	0.03	806,019	0.01%	117
	National Trust Company	33,926,444	23.00	780,308,212	14%	109,612,442
	<b>MV<sub>TOTAL PORTFOLIO</sub></b>			5,554,852,139	100%	
<b>AWMV</b>					<b>1,627,537,627</b>	
<b>INVESTMENT DEALERS</b>	AGF Management Limited	8,004,593	7.25	58,033,299	4%	2,170,017
	BGR Precious Metals Inc.	5,954,038	7.50	44,655,285	3%	1,284,856
	Central Fund of Canada Ltd.	16,824,300	4.35	73,185,705	5%	3,451,129
	Canada General Investments Limited	n/a				
	CSA Management Inc.	2,528,344	3.50	8,849,204	0.57%	50,456
	Consolidated Canadian Express Ltd.	n/a				
	Dumdee Bancorp Inc.	n/a				
	Fahnestock Viner Holdings	11,323,375	8.13	92,002,422	6%	5,453,900
	First Marathon Inc.	20,846,644	11.00	229,313,084	15%	33,881,788
	Mackenzie Financial Corporation	57,843,400	6.25	361,521,250	23%	84,212,450
	Sceptre Investment Counsel Ltd.	n/a				
	Edper Group Limited	90,968,500	5.25	477,584,625	31%	146,963,443
	United Corporations Limited	7,194,916	28.75	206,853,835	13%	27,569,939
	<b>MV<sub>TOTAL PORTFOLIO</sub></b>			1,551,998,709	100%	
<b>AWMV</b>					<b>305,037,978</b>	

<sup>1</sup> Shares outstanding and prices were taken at the end of December, 1991

## Average Weighted Market Value (AWMV) - 1997

		Shares Outstanding <sup>1</sup>	Price <sup>1</sup>	Market Value [MV <sub>INDV</sub> ]	MV <sub>INDV</sub> /MV <sub>TOTAL</sub> PERCENTAGE	(3) / (4)
		(1)	(2)	(3)	(4)	(5)
<b>BANKS</b>	Bank of Montreal	261,436,344	63.35	16,561,992,392	17%	2,878,229,767
	Bank of Nova Scotia	244,913,678	67.35	16,494,936,213	17%	2,854,970,201
	C.I.B.C.	413,377,923	44.60	18,436,655,366	19%	3,566,683,510
	Laurentian Bank	18,032,019	28.15	507,601,335	1%	2,703,621
	National Bank	170,461,483	23.60	4,022,890,999	4%	169,815,305
	Royal Bank	308,239,532	75.60	23,302,908,619	24%	5,697,975,310
	Toronto-Dominion Bank	296,923,929	53.80	15,974,507,380	17%	2,677,658,868
	<b>MV<sub>TOTAL PORTFOLIO</sub></b>			95,301,492,305	100%	
<b>AWMV</b>					<b>17,848,036,583</b>	
<b>INSURANCE</b>	Consolidated SYH Corporation		n/a			
	Equisure Financial Network Inc.	12,654,935	8.25	104,403,214	1%	799,698
	Fairfax Financial Holdings Ltd.	10,383,530	320.00	3,322,729,600	24%	810,005,856
	Geran Capital Inc.	5,348,812	42.10	225,184,985	2%	3,720,292
	Great-West LifeCo. Inc.	186,642,450	38.50	7,185,734,325	53%	3,788,266,045
	London Insurance Group Inc.	82,001,049	34.05	2,792,135,718	20%	571,967,310
	Reed Stenhouse Companies Ltd.		n/a			
	<b>MV<sub>TOTAL PORTFOLIO</sub></b>			13,630,187,842	100%	
<b>AWMV</b>					<b>5,174,759,202</b>	
<b>TRUSTS</b>	CT Financial Services	120,071,096	54.00	6,483,839,184	74%	4,788,707,860
	Genra Incorporated	195,517,645	5.25	1,026,467,636	12%	120,017,450
	Home Capital Group Inc.		n/a			
	Hees International Bancorp Inc.		n/a			
	Landmark Global Financial Corp.	6,028,744	0.43	2,592,360	0%	765
	National Trust Company	36,967,083	34.25	1,266,122,593	14%	182,601,941
	<b>MV<sub>TOTAL PORTFOLIO</sub></b>			8,779,021,773	100%	
	<b>AWMV</b>					<b>5,091,328,017</b>
<b>INVESTMENT DEALERS</b>	AGF Management Limited	12,679,658	54.95	696,747,207	8%	55,794,704
	BGR Precious Metals Inc.	7,427,938	10.40	77,250,555	1%	685,876
	Central Fund of Canada Ltd.	18,099,300	5.50	99,546,150	1%	1,138,915
	Canada General Investments Limited	16,181,634	15.65	253,242,572	3%	7,370,822
	CSA Management Inc.	6,015,510	6.75	40,604,693	0%	189,494
	Consolidated Canadian Express Ltd.	10,416,885	1.35	14,062,795	0%	22,729
	Dundee Bancorp Inc.	26,710,528	30.10	803,986,893	9%	74,291,726
	Fahnestock Viner Holdings	12,565,285	25.00	314,132,125	4%	11,341,414
	First Marathon Inc.	22,598,984	20.45	462,149,223	5%	24,547,483
	Mackenzie Financial Corporation	124,584,930	18.35	2,286,133,466	26%	600,683,456
	Sceptre Investment Counsel Ltd.	13,217,805	33.90	448,083,590	5%	23,076,003
	Edper Group Limited	116,223,757	23.90	2,777,747,792	32%	886,804,995
	United Corporations Limited	8,374,098	51.00	427,078,998	5%	20,963,266
	<b>MV<sub>TOTAL PORTFOLIO</sub></b>			8,700,766,058	100%	
<b>AWMV</b>					<b>1,706,910,883</b>	

<sup>1</sup> Shares outstanding and prices were taken at the end of December, 1997

## APPENDIX 6

- Firms in shaded areas are not included in the dataset because they are not publicly traded or foreign companies own them.
- Target firms that are strikethrough are not publicly traded, therefore, their holding companies (column at their right) were taken as the target portion.

<u>Event Day</u>	<u>BIDDERS</u>	<u>PILLAR</u>	<u>TARGET</u>	<u>HOLDINGS PILLAR</u>
<b>1992</b>				
16-Dec	Montreal Trust Company			
25-Jun	TD Bank	Bank	Central Guaranty Trustco Ltd	Trust
26-Nov	Royal Bank	Bank	Central Guaranty Trustco Ltd	Trust
06-Oct	Canadian Insurance Group Limited		Yoyague Insurance Co.	
16-Dec	Dundee Bancorp Inc.	Investment	Central Capital Corp.	Trust
16-Jul	Fairfax Financial Holdings Ltd	Insurance	Dundee Capital Inc.	
01-Dec	Mackenzie Financial Corp	Investment	Hamblin Water Investment Council Ltd	
29-Jun	AGF Management Ltd.		U.S.F. Time Management Ltd.	
<b>1993</b>				
18-Mar	Royal Bank		Canadian General Investments Ltd	Investment
28-Jan	National Bank	Bank	Royal Trustco Ltd.	Trust
19-Nov	National Trust Company	Trust	General Trustco of Canada Inc.	
27-Dec	Laurentian Bank	Bank	Dominion Trust Company	
13-Apr	TD Bank	Bank	Pretor Financial Ltd.	
02-Dec	Bank of Nova Scotia	Bank	Westpac Banking Corp	
06-Oct	TD Bank	Bank	Montreal Trustco Inc.	
			Murhardt-Beverage	First Marathon Inc.
				Investment

23-Jun	Canadian Western Bank	Bank	Charlton Securities Ltd.	Bank
29-Oct	Fairfax Financial Holdings Ltd.	Insurance	Reid's Insurance Co. (US)	Bank
27-May	Newcourt Credit Group Inc.		Bank of Montreal-Leasing Corp.	Bank of Montreal
<b>1994</b>				
12-Oct	Canadian Western Bank	Bank	North West Trust Co.	
05-Jul	Bank of Nova Scotia	Bank	Barclays Bank PLC	
15-Apr	Bank of Montreal	Bank	Suburban Bancorp Inc.	
31-Jan	CT Financial Services Inc.	Trust	Meridian Securities International Ltd.	Royal Bank
25-Nov	Royal Bank	Bank	RBC Dominion Securities Inc.	
08-Sep	Fairfax Financial Holdings Ltd.	Insurance	Continental Canada	
03-Jan	CIBC	Bank	Personal Insurance Co. of Canada	
09-Sep	National Bank	Bank	Confederation Trust Co.	
17-Aug	Great West Lifeco	Insurance	Confederation Life Insurance Co.	
28-Jul	Robertson Stephens & Co. Inc.		Dundee Bancorp Inc.	Investment
15-Dec	TD Bank	Bank	Lancaster Financial Holdings Inc.	
09-Jan	Brassco Ltd.		Trilon Holdings Inc.	Trilon Financial Corp.
22-Feb	National Bank	Bank	CT Financial Services Inc.	Investment
<b>1995</b>				
06-Jul	TD Bank	Bank	Standard Chartered Bank of Canada	
08-Sep	Bank of Nova Scotia	Bank	Corporacion Mercabun-Costa Rica	
05-Oct	Bank Montreal	Bank	Household Trust Co.	
06-Oct	CIBC	Bank	Firstline Trust Co.	
02-Nov	AGIF Management Ltd.	Investment	20/20 Financial Corp.	Investment



28-Apr	National Bank	Bank	Compassionate Life Insurance Co.	
12-Dec	CT Financial Services Inc.	Trust	Canadian Family Life Insurance Co.	
31-Jan	International Nederlanden Canada Corp.		Wellington Insurance Co.	London Insurance Group Inc.
15-Sep	International Nederlanden Canada Corp.		Wellington Insurance Co.	London Insurance Group Inc.
03-Oct	Brascan Ltd.		Trilon Financial Corp.	Investment
02-Nov	Melton Bank Canada		Revel Trustee Ltd.	Trust
17-Apr	CIBC	Bank	Argosy Group L.P.	
03-Nov	Newcourt Credit Group Inc.	Trust	Lessor Capital Services Inc.	
<b>1996</b>				
31-May	Canadian Western Bank		BC Bancorp	Bank
15-Apr	Canadian Western Bank	Bank	Aetna Trust Co.	
15-Mar	Laurentian Bank	Bank	Trust Inc. et Revenu	
11-Apr	National Bank	Bank	Family Trust Corp.	
04-Mar	Bank Nova Scotia	Bank	Barclays Bank Branches	
16-Apr	Bank Montreal	Bank	Bank Branch Operations and Depots	
18-Jul	CIBC	Bank	Mander International Ltd.	Royal Bank
10-Apr	TD Bank	Bank	Waterhouse Investor Services Inc.	
18-Dec	CT Financial Services Inc.		Melodie Mamer Inc.	London Insurance Group Inc.
04-Jun	Equisure Financial Network Inc.	Insurance	Banking Hall & Grubbins Insurance Inc.	
29-Nov	Bank of Nova Scotia	Bank	Mortgage Insurance Co. of Canada - MICC	
30-Dec	Equisure Financial Network Inc.	Insurance	Baker Insurance Brokers Ltd.	
29-May	Kent Coleshill Buildings		Pembroke Inc.	Insurance
06-May	London Life Insurance Co.	Insurance	Sim To Life Insurance Co.	
01-Feb	Coran Capital Inc.	Insurance	Superior Insurance Co.	

21-Feb	Fairfax financial Holdings Ltd.	Insurance	Scotia America Reinsurance Corp.
06-Sep	Fairfax Financial Holdings Ltd.	Insurance	Compagnie Transcontinentale de Réassurance
17-Oct	Edper Group Ltd.	Investment	Hees International Bancorp Inc.
17-Apr	Brascan Ltd.		Hees International Bancorp Inc.
14-Aug	TriMark Financial Corp.	Investment	Bayshore Trust Co. Ltd.
26-Dec	Pembridge Inc.	Insurance	DMI Ventures Inc.
29-Apr	CT Financial Services Inc.		National Trustco Inc.
25-Jul	Royal Bank	Bank	TD Bank
22-May	Newcourt Credit Group Inc.	Trust	Investpark (Unit US)
<b>1997</b>			
24-Jun	Bank NS		National Trustco Inc.
12-Aug	First Int'l Asset Mgmt. Inc.		Grube Financier-Guereide Inc.
30-May	Bank Nova Scotia	Bank	Laurentian Bank
10-Apr	Dundee Bancorp Inc.	Investment	PT Bank Arya Panchajanya-Indonesian
16-Oct	Morningstar/Springfield Group		Maffean Leifire Inc.
08-Sep	CT Financial Services Inc.	Trust	FM Financial Products
23-Sep	Canadian Western Bank	Bank	First Marathon
16-Jun	Star Data Systems Inc.	Investment	Gordon Private Capital Corp.
23-Apr	Iconic Ventures Inc.		Milestone Chariton Securities Ltd.
11-Sep	National Bank	Bank	Multipath Business Systems Inc.
24-Mar	TD Bank	Bank	Engle & Partners Inc.
12-Jun	Fahnestock Vineer Holdings Inc.	Investment	Nadett Provencher & Associés
02-Oct	TD Bank	Bank	Paul Securities Ltd. Australia
16-Dec	AGF Management Ltd.	Investment	First of Michigan Capital Corp. USA
			Kennedy, Cabot & Co. USA
			NCL (Securities) Ltd.

19-Aug	Great-West Lifeco Inc.	Insurance	London Insurance Group Inc.	Insurance
07-Jul	Bank Montreal	Bank	Desjardins-Laurentian Financial Corp.	
14-Feb	Kingsway Financial Services Inc.	Insurance	Jayco Insurance Co.	
24-Sep	Equisure Financial Network Inc.	Insurance	Chapman Graham & Assoc.	
13-Aug	Intercargo Corp.		Kingsway Financial Services Inc.	Insurance
23-Jun	Fairfax Financial Holdings Ltd.	Insurance	Sphere Drake Holdings Ltd.; Bermuda	
11-Jul	Queensway Financial Holdings Ltd.	Insurance	Consolidated Property and Casualty Ins. Co.	
21-Apr	Canadian Investment Group		Quorum Growth Inc.	Trust
20-Mar	Canadian Western Bank	Bank	Inland Mortgage Corp.	
02-May	Consolidated Canadian Express Ltd.	Investment	Consolidated Fairfax Corp.	
29-Apr	Brassco Ltd.		Edper Group Ltd.	Investment
19-Mar	CIBC	Bank	R.M. Trust Co.	
20-Feb	Royal Bank	Bank	Bank Nova Scotia	
05-Sep	Newcourt Credit Group Inc.	Trust	Business Technology Finance	

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