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POLITICAL RISK IN QUEBEC, FIRM VALUATION, AND BUSINESS RELOCATION ANNOUNCEMENTS

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A Thesis
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of
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Abstract

Political Risk in Quebec, Firm Valuation, and Business Relocation Announcements

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A significant number of companies have relocated their facilities outside Quebec in response to the political uncertainty in the Province. This political instability, which emanates from the separation demand supported by the French separatist party (Parti Quebecois), has a rather long history and provides a unique research opportunity to assess the magnitude and direction of political risk on asset valuation.

This paper explores the effects of the announcements of business relocation decisions by examining stock market's reaction to such announcements. In particular, we study the difference in the market's response to the relocations from Quebec (Montreal) and from the rest of Canada. Further, we shed light on the effects of the information conveyed by the relocation announcements on stock prices.

Previous research has reported some evidence from the U.S. on the effects of the announcements of relocations. Benefiting from the event study methodology, we find statistically significant and positive reaction to such announcements. More importantly, we find statistically significantly different abnormal returns in favor of Quebec (Montreal) relocations. That is, firms relocating from Quebec (Montreal) experience statistically significantly higher stock prices relative to these which relocate from other provinces. We attribute this difference to the existence of political risk in Quebec. The results concerning the effects of the information content of such announcements are generally consistent with the existing studies.

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1. Introduction

Kobrin (1979) defines political risk as the current and potential impacts of the political environment upon a firm's operations, given certain relative factors. It has been widely recognized that political risk is an important input in a firm's strategic decision making process, and its importance is becoming more visible as the process of globalization of markets is gaining momentum. Yet, political risk is considered as an elusive concept that is not well applicable to empirical measurement (Cosset and Rianderie, 1985). Researchers studying political instability generally benefit from political risk rating services[1]. These services prepare political risk ratings based on the assessments of their experts. Apparently, these services only serve as an (subjective) approximation to actual political risk.

This thesis is an empirical study of the effects of the long-lasting political instability in Quebec, Canada on asset valuation. Quebec has been experiencing political instability ever since the Parti Quebecois[2] (PQ) became the dominant political force in Quebec starting by the early 1960s. A detailed chronology of the separatist movement in Quebec is given in the Appendix 1. Bill 101[3] in 1977 and the first referendum for separation in 1980 were some of the first products of PQ's separatist actions. The

[1] Some of these services are International Country Risk Guide (ICRG), Inter-University Consortium for Political and Social Research (ICPSR), Business Environment Risk Intelligence (BERI), Economist Intelligence Unit (EIU), Euromoney, Standard & Poor' s Rating Group, and Moody's Investor Services.

[2] The ultimate purpose of PQ is to separate Quebec from Canada and become an independent country. Separatism has always been the driving force for PQ. Indeed, the first section of PQ's party charter is denoted to sovereignty.

[3] The Charter of the French Language, known as Bill 101, has had a significant impact on the Quebec society, by making French the official language of Quebec. The law includes a requirement for the francization of the workplace and limits access to English schools to students whose parents were educated in English in Canada. Originally, the law required the exclusive use of French on commercial and road signs, but that has since been changed to also allow the use of English as long as French is the "predominant" language.

political instability and its effects on Quebec businesses have been often publicized. For example, Gregor (1977) states that "Economic and political uncertainty are beginning to hurt Quebec's economy. In the face of such uncertainty, businessmen are afraid to plan and invest, and the government is openly hostile toward business." Referring to the recent relocations of some Quebec-based firms, Symonds (1996) says that the political uncertainty concerning Quebec's possible secession has caused businesses to move their operations out of Quebec. This trend does not appear to end soon[4].

We argue that the firms moving out of Quebec should face considerably less political risk. Therefore, the market will reevaluate their values in response to the firms' announcements of their relocation decisions. We expect that these firms' values will increase due to the expected decrease in their total risk[5]. By studying the relocation decisions, we also examine indirectly the economic consequences of this political instability for the regional economies of the Province of Quebec and the City of Montreal. It is apparent that economic well-being of a region is also affected by the relocating companies. That is because they provide tax revenues, new jobs, and also attract other businesses to that region. Thus, this thesis makes contributions to both the investments and the political risk literature. Indeed, one can regard this study as a bridge

[4] Just after the provincial elections in November 1998, Jean Charest, the opposition leader in the Quebec parliament, stated that "Quebecers should not be fooled into thinking the threat of a referendum has been lifted." (Gordon, 1998). Following that, Premier Lucien Bouchard said that, " Certainly, we have a mandate to hold a referendum (for independence). (Thompson, 1998).

[5] In general, political risk falls into the category of the market-wide forces as it would influence many firms facing it. This implies that political risk has great relevance for foreign direct investment decisions. In terms of the traditional view of asset valuation, political risk reduces the value of assets either through a reduction in cash flows or an increase in investment risk or both (Agmon and Findlay, 1982). For example, the provincial government's enforcement that firms use French rather than English, Bill 101, has a lot of operating costs for firms which have been doing business in English. Such enforcement may also cost firms by making it far more difficult to recruit and retain key personnel and invest substantial amounts of resources in training current and new personnel. Meanwhile, the political instability that arises each time the issue of separation is put forward for a vote has implications for the Province's economic outlook and affects negatively the cost of capital and therefore the discount rates for the involved firms.

between these two distinct fields. First, from the corporate investments perspective, this thesis will be providing the first international empirical evidence on how business relocation decisions affect firm valuation and will also be the first one in assessing the effects of political instability on asset valuation, using objectively determined and observed stock market prices for a sample of Canadian firms. Second, from the political risk point of view, this thesis will be the first study to focus on political risk in developed markets. Extant research examines the effects of political risk on the investments in emerging stock markets, on the exchange rate markets, and on the foreign direct investment decisions of multinational companies and countries. Since our data pertain the stock market transactions of a G7 country, our work represents a major advance over the existing studies on political instability. Finally, we note that we construct subsamples of firms relocating from Quebec and other than Quebec to single out the effect of political instability in Quebec on firm valuation. Thus, the research design is yet another strength of this study.

We examine the business relocation decisions from 1970 to 1997 in Canada. Using mainly *The Financial Post*[6], we identify 231 relocation announcements. Unfortunately, this number decreases to 87 due to the unavailability of daily stock prices for many firms. Next we construct different subsamples based on the geographic location of the relocating firms, such as, Quebec, Montreal, Toronto and the rest of Canada. Benefiting from the standard event study methodology, we examine the differences in the stock market's response to the relocation announcements for these subsamples, and find that its reaction to the Quebec and the Montreal firms' relocation announcements is

positively and statistically significantly higher than that for the control samples. We attribute this difference to the reduction in the amount of political instability that the relocating firms would be facing.

The stock market negatively evaluates the business expansion and capacity reduction related relocations. However, we do not observe any statistically significance associated with these samples of announcements. Investors tend to consider cost savings, consolidation, and other reasons-related relocations statistically significantly and positively while they judge negatively the announcements where the type of facility is not stated, or it is a division-regional headquarters. Interestingly, we detect statistically significant and positive market reaction to the plant relocation announcements. These results are generally consistent with the results reported in the literature on corporate relocations.

The rest of the thesis is organized as follows: The first section reviews the existing literature on political risk and corporate investments. It also explains the relationship between the firm value and uncertainty, paying particular attention to political instability. The second section includes the hypotheses. The data are explained in the third section. The fourth section explains the methodology used in testing the stock market's reaction to relocation decisions. The results are discussed in the fifth section. Finally, the sixth section concludes the thesis.

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[6] *The National Post*, as of October 1998.

2. Literature Review

2.1. Political Risk

Country risk[7] consists of four broad categories; political risk, sovereignty risk, transfer risk, and exchange rate risk. There are various definitions of political risk. For example, Robock (1971) states that "political risk in international business exists (1) when discontinuities occur in business environment, (2) when they are difficult to anticipate and (3) when they result from political change." Meanwhile Haendel, West, and Meadow (1975) indicate that it is "the risk or probability of occurrence of some political event that will change the prospects of the probability of a given investment".

Robock (1971) identifies the sources of political risk as competing philosophies (socialism, communism, etc.), social unrest and disorder, vested interests of local business groups, recent and impending political independence, armed conflicts and internal rebellions for political power, and finally, new international alliances. More generally, Root (1987) indicates that political risk arises from the uncertainty of political stability and is created during periods of political turmoil.

Political risk can take many forms. Some of these are explicit barriers to capital flows, expropriation (the foreign company is ceased to operate through some sort of compensation or negotiation), nationalization (expropriation of all the companies in a

[7] Country risk "arises from the possibility that economic or political changes in a foreign country may adversely affect the value of trade or financial transactions involving that country." (Newman et al., 1992).

single industry), confiscation (the loss of all local assets without compensation or negotiation), operational restrictions (through control of market share, product, and employment policies), discrimination (through taxes and compulsory subcontracting), damage to property (from riots, revolutions, civil disorder, and war), etc.

Robock (1971) groups political risk into two broad categories. Macro political risk pertains to government policies which are directed at all foreign companies in a particular country, while micro political risk occurs when the environmental changes are intended to affect only selected industries or enterprises with specific characteristics. Macro political risk is more dramatic than micro political risk. Taking a different view, Root (1972) categorizes political risk into three groups. Transfer risk results from restrictions on flows of capital, payments, products, etc. Operational risk results from constraints on the management and performance of operations. Finally, the ownership-control risk arises from government policies and actions with respect to ownership or managerial control.

Studies on political risk are mainly concentrated in the effects of political risk on firms with foreign direct investment (FDI). In addition, there are a number of studies on international portfolio investment decisions, especially in emerging countries. However, the extent to which the environment-economic, social and specially political- affects the investments has proven to be difficult to investigate empirically.

Tallman (1988) investigates the domestic motives underlying FDI into the U.S. The data cover the period from 1974 to 1980, and a total number of fourteen countries. Benefiting from the multiple regression techniques and using economic[8] and political risk measures, he constructs a model to predict the magnitude of FDI. He uses both domestic and international measures of political risk. He obtains the home country political risk variables from the *Conflict and Peace Data Bank*[9]. In a similar way, the bilateral international measures indicate the overall relationship between two countries, based on a series of events. Specifically, the national political risk variables are the levels of domestic conflict and cooperation, and the international variables are the bilateral international conflict and cooperation between a given sample nation and the U.S. The results reveal that the economic and political conditions in the home country take an important place in FDI decisions. The GDP per Capita is found to be the most important variable in explaining the magnitude of FDI. Domestic level of political instability is statistically significantly and positively related to the magnitude of FDI. The level of international conflicts adversely, but insignificantly affects FDI.

Kamal and Hossein (1994) investigate the association between political instability and the flow of several forms of FDI in fourteen developing countries between 1950 and 1982. Specifically, they examine the sectors of manufacturing, petroleum, and mining in the U.S. They use seventeen proxy variables of political instability that indicate the frequency and the nature of political events. These variables are compiled by the *Inter-*

[8] The economic conditions are represented by the Gross Domestic Product (GDP) and GDP per Capita of each country.
[9] This data source focuses on unique events (such as strikes) rather than the underlying trends or conditions (such as slowing economic growth). Although not all events are explicitly political in nature, Tallman argues that the unique events are relevant to measuring political risk in the sense of establishing favorable or unfavorable business conditions.

University Consortium for Political and Social Research (ICPSR). Some of these variables are riots, imposition of political sanctions, political strikes, and elections. They also use multiple regression techniques. The results indicate that multinational companies in different industries are affected at different levels by sociopolitical instability in a host country.

In another study, Kamal (1994) studies the relationship between capital flight and political instability in seventeen Latin American countries for a period between 1954 and 1982. He uses the same database, ICPSR and the same political risk variables in his study. His results show that the political instability is related positively to changes in the magnitude of capital outflow.

Phillips-Patrick (1989) studies the relationship between a firm's political risk and its asset ownership structure. The results show that foreign ownership increases political risk that a firm faces. Further, its ability to shift future investments elsewhere mitigates this. He also observes that the Paris stock market responds negatively when Francois Mitterrand[10] won the presidential election in France.

Agmon and Findlay (1982) discuss that political risk is not only restricted to international investments and tie the poor performance of U.S. stock market to the existence of this risk. They develop a discounted-cash-flow model to measure the impact of political risk. Mahajan (1990) benefits from the option pricing theory in explaining the effects of expropriation on the value of a multinational company. We will study these two

studies in detail in the following section.

Benefiting from the portfolio theory, Butler and Joaquin (1998) study the effects of political risk on two issues: the valuation of multinational corporations and investors' required rate of return. They relate these impacts to the risk of the investors' portfolios. Specifically, they develop a model that divides sources of political risk into systematic and nonsystematic components. Their model can be used to calculate cost of capital or risk and return characteristics of portfolios in politically risky situations.

In the literature of political risk, some studies do focus on the equity markets. Shum (1996) examines the stock market reaction to the Charlottetown Accord[11]. Under the assumption that investors support a 'Yes' vote to the accord, the probability of a 'Yes' vote should be positively related to the stock index (TSE 300 Index). Benefiting from opinion poll results, he conducts a multiple regression model using four measures of this probability[12]. The results reveal that all the poll variables have positive signs, meaning that investors respond positively to an increase in the possibility of accepting the Accord. Further, there is no statistically significant negative reaction to the rejection of the Accord. He argues that this might be because the referendum results were already incorporated into the stock prices before the referendum was held.

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[10] He was known for advocating policies of nationalization.

[11] In August 1992, the negotiations with sixteen government leaders and representatives of the aboriginal peoples produced the *Consensus Report on the Constitution,* known as the Charlottetown Accord. There was a common opinion before the referendum that the rejection of the accord would lead to a possible breakup of Canada. The accord was rejected on October 26, 1992.

[12] The first poll variable measures the percentage of Yes support in each poll; the second one refers to the percentage of Yes lead; third and fourth variables are modified versions of the second poll variable.

Diamonte, Liew, and Stevens (1996) quantify the extent political risk affects the stock returns. They study twenty-one developed and twenty-four emerging markets from January 1985 to June 1995. They use the *International Country Risk Guide*'s[13] (ICRG) political component as a proxy for political risk. They observe that political risk has a statistically significantly larger impact on emerging markets than in developed markets. Further, those emerging markets experiencing upgrades[14] have statistically significantly higher stock returns than those experiencing downgrades. Another finding of their study is that emerging markets have become politically safer and developed markets have become riskier.

Bittlingmayer (1998) examines volatility patterns in the German stock market in response to political events between 1880 and 1940. He argues that an exogenous factor might cause both volatility and business slumps, and this factor may very well be the political uncertainty. The regression results show that changes in stock price volatility alone accounts for twenty-three percent of industrial production volatility. Stock price volatility together with other two dummy variables[15] explains fifty-four percent of the output volatility. The plot of the German stock index versus major political events reveals that the stock market's reaction is highly related to those events. Together with the regression results, he concludes that political events were the source of volatility in both stock prices and the industrial production in Germany during 1914 through 1940.

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[13] ICRG monthly publishes both thirteen separate political risk ratings and a combination of all of them. Some of these ratings are; political leadership, political party development, quality of bureaucracy, and racial and nationality tensions. This rating service is widely used in industry to determine the risks of investing, operating, or lending to particular parties.

[14] That is a decrease in political risk. Examples of political upgrades are removing currency restrictions, removing foreign investment restrictions, etc.

[15] First dummy variable is called DEFLAT and takes the value of 1 if the inflation rate is negative. The second variable

Cosset and Suret (1995) quantify the reduction in the overall portfolio risk achieved through inclusion of politically risky countries. Their sample consists of thirty-six developed and developing countries between April 1982 and December 1991. They use the monthly political risk ratings of *Political Risk Services*[16] (PRS) as the measures of political risk. They find that political risk is not unique to emerging countries, and diversification across politically risky markets pays off.

Errunza and Losq (1987) study the information content of four different categories of risk, namely currency risk, political risk, investment risk, and "risk arising out of the development stage of emerging markets". They analyze each risk category for international investments. From the perspective of a well-diversified foreign investor, political risk due to exogenous shocks (such as changes in the world demand and trade) will carry a greater systematic risk component than systematic risks associated with internal forces. Their conclusion is that foreign investors can manage and in some cases earn abnormal returns for bearing political risk.

Erb, Harvey and Viskanta (1996) conduct a similar study. They use five measures of country risk; four of these measures are retrieved from the ICRG's political, financial, economic and composite risk ratings. The country credit ratings are gathered from the *Institutional Investor*'s country credit ratings. Their sample consists of 117 countries between January 1984 and July 1995. Their findings show that the ICRG's indexes

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is WWI, it takes the value of 1 if the time is between 1914 and 1940.

[16] PRS reports risk ratings for three types of risk: Financial transfer risk, direct investment risk, and export market risk. Cosset and Suret (1995) use the financial transfer risk category. Specifically, this category refers to the risk from financial transfer, non-convertibility from the local currency to the desired foreign currency, and the transfer of foreign currency out of country.

contain considerable information. Further, its economic and financial risk ratings have some predictive power in the cross-section of expected returns of national equity indexes, particularly in developed markets. Its political risk rating has some marginal predictive power only in emerging markets.

There are also a few studies considering the effect of political risk in foreign exchange markets. Among these studies, Cosset and Rianderie (1985) investigate foreign exchange market reaction to political events in eight developed countries. From March 1973 to December 1983, they study the unexpected political events worldwide. They search the *Wall Street Journal Index* to identify the political events such as war, nationalization, taxation, foreign exchange control, etc. Their findings show that political risk news leads to changes in countries' exchange rates. The reaction of exchange rate market to (un) favorable[17] events is found (negative) positive. The reaction to unfavorable events is found to be more dramatic.

Bailey and Chung (1995) study the impact of political risk along with the exchange rate volatility on risk premiums associated with equity returns in Mexico from January 1986 to June 1994. They discuss that if the effects of currency and political risk can not be eliminated through diversification, exposure to these factors should yield risk premiums in equilibrium. Using the data available *in Interacciones Casa de Bolsa S.A. de C.V.*, they specify four factors to represent the economic trend, political risk, and currency risk. The authors hypothesize that credit risk and political risk are positively correlated. The results provide some evidence that the expected cost of Mexican

sovereign default risk and the risk from the changes in the U.S. dollar premium affect equity market premiums[18].

2.2. Firm Valuation and Political Risk

Modern finance theory states that the value of a firm is a function of its discounted expected future cash flows. According to this, a change in the value of a firm will take place following a change either in the expected future cash flows that the firm can generate or in the discount rate or in both. Specifically, expected future cash flows are affected by the total risk of the firm, while the discount rate is only affected by the systematic risk (Shapiro, 1990).

These changes can occur as an outcome of either general market-wide forces, such as business cycles, interest rate movements, changes in the tax code or engagement in a war, or firm-specific factors, such as a merger, a layoff, a strike, a default of a loan or a change in the top management. The general market forces are beyond the control of individual firms and should influence all the firms in a given economy. On the other hand, firm-specific factors are under the control of a given firm and are unique to that firm and therefore should influence only that firm. In general, political risk can be considered as a component of market risk[19].

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[17] Favorable events are those that are expected to affect the business environment favorably.

[18] DCREDIT - measured as the monthly return spread between a dollar bond issued by the Mexican government and a matched maturity U.S. Treasury note- reflects the expected cost of Mexican sovereign default risk. The other proxy is DFX-PREM, and it is measured as the monthly change in the free market premium for U.S. dollar. It reflects the changes in a combination of legal, political, and currency factors.

[19] Miller (1992) studies the general, industry, and firm-specific factors in an international environment. He provides a framework that gives the details of a three part integration of international risk variables: (1) general environmental,

Although capital-budgeting procedures such as the net present value (NPV) and the internal rate of return methods are not originally developed for risk assessment purposes, they offer a flexible method of incorporating risk analysis into the investment evaluation process. In the evaluation process of the actual impact of a particular risk on the firm valuation, there are two general approaches to incorporate political risk into the capital budgeting process; downgrading the future expected cash flows or upgrading the discount rate (Shapiro, 1978). Adjusting cash flows is a more appropriate method than adjusting the discount rate because it enables one to incorporate all available information regarding a specific event. However, Trippi (1989) discusses that if the uncertainty regarding investment returns is primarily associated with their durations, then an additive discount rate premium should be used. Indeed, this method is used more often by corporations (Shapiro, 1990).

There are some studies using the NPV criterion in measuring political risk. Agmon and Findlay (1982) study the effects of domestic political risk on the U.S. stock markets. They argue that there is a domestic political component in the U.S. since the attempts by various parties to throw the burden of the taxation process to others increase the volatility of relative price changes[20]. Moreover, this volatility arises from the interaction between the government and the various groups in the economy. They attempt

(2) industry, and (3) firm-specific risks. General environmental risk includes political and government policy instability, and macroeconomic uncertainty.

[20] Suppose that there is a group that seeks to improve its –relative- wealth. It attempts to achieve its purpose through lobbying the government. As a result of its effort, it avoids taxation. Meanwhile other groups try to change/to restore or even improve their own status as well. This process carries through itself constantly and causes an increase in the volatility of changes in relative prices. Specifically put, government policies affect relative prices by levying taxes, by transferring payments, and by regulations.

to explain the effects of political risk by using the NPV framework. They first utilize Gordon's growth model, which is a simple valuation model based on both earnings and investment opportunities:

$$P_{i_0} = \frac{(1-b)EPS_{i,1}}{1+k_1} + \frac{(1-b)EPS_{i,1}(1+bR_2)}{(1+k_1)(1+k_2)} + \frac{(1-b)EPS_{i,1}(1+bR_2)(1+bR_3)}{(1+k_1)(1+k_2)(1+k_3)} + \ldots$$

where,

P_{i_0} = The current market value of firm i,

$EPS_{i,1}$ = Earnings per share (EPS) at time 1 for firm i,

b = Retained earnings as a fraction of total earnings, (assumed constant over time),

R_t = The internal rate of return at time t and,

k_t = The discount rate at time t

where $t = 1,2,\ldots,\infty$.

Then assuming that R_t and k_t are constant, the following equation is obtained;

$$P_{i_0} = \frac{(1-b)EPS_{i,1}}{k-bR}$$

They incorporate political risk into this equation in two ways. First, under the assumption of treating the domestic government intervention as a lump sum taxation[21] on the investment projects of the firm, a hike in this taxation will decrease the retained earnings, and therefore decrease the funds available for investment. The firm can avoid this taxation if it transfers the taxation onto shareholders. Otherwise, the firm will be worth less. Or alternatively, the rate of return of investments, R_t can be adjusted to reflect this risk.

[21] An example of such a taxation may be the compliance with environmental regulations.

Mahajan (1990) examines expropriation, which is considered the most extreme form of political risk. He points out that when the probability of expropriation is independent of a project's value, the only appropriate valuation technique is the contingent claims analysis. Specifically, the act of expropriation can be considered as the exercise of a call option. The buyer of this option is the host country government and the writer is a multinational corporation, investing in that country. Exercising occurs when the government expropriates the corporation ownership in the foreign facility by paying the exercise price- a form of compensation, etc-[22]. His model can serve for two purposes. First, it provides a framework for evaluating FDI. Second it is a tool to determine the optimal investment mixture of foreign projects.

2.3. Capital Investment Decisions

As argued earlier, this study benefits from the stock market response to the announcements of business relocation decisions in measuring the political risk premium. Therefore, we give a brief review of the literature regarding such corporate decisions.

As discussed earlier, the benefits that follow from corporate relocation decisions should be greater than the costs involved in these decisions for the decisions to be economically justified. In the finance parlance, this is the case of a positive NPV stemming from such a decision. That is, the expected cash inflows (e.g., tax breaks, lower

[22] See also Clark (1997) for an alternative model on firm valuation in case of expropriation. He also benefits from option pricing theory in modeling.

labor and rent costs, lower capital costs as a result of advanced technological environment in the new location) from such a decision should be larger than the expected cash outflows (e.g., moving costs, losing some of the key human resources, costs of customers' reactions). Alli, Ramirez, and Yung (1991) argue that the moving firms should experience a positive market reaction if the investors believe the operation is a positive NPV project. Chan, Gau and Wang (1995) note that the market uses investment decisions as input for the valuation of future prospects of a firm.

Although relocation decisions are a part of corporate investment decisions, the number of studies investigating the wealth effects of relocation on valuation of companies is limited. Indeed, to our knowledge, there are only four published articles studying this particular subject, and they all study samples of U.S. firms.

Alli et al. (1991), investigate how the stock market responds to the corporate headquarters relocation decisions and the factors associated with relocation decisions. Their data contain 112 companies traded on the NYSE, AMEX, and NASDAQ stock exchange markets and covers the January 1980 to December 1988 period. Using the event study methodology, they find statistically significant abnormal returns around the two-day event period. Regression results reveal that the availability of labor is positively, while both reduction in number of employees and cost of living in the new place are negatively related to the observed stock returns during the same event period. They also note that the companies relocating their headquarters to Fortune-ranked cities have higher managerial ownership than the companies moving to non-ranked cities. Furthermore,

their results from a logit analysis show that the relocating companies, on average, are larger, less profitable, have more expenses, and pay fewer taxes than the non-relocating companies in the same industry within the two years around the event year.

Chan et al. (1995) analyze business relocation decisions. They include corporate headquarters, subsidiary headquarters, and plants in business relocations. They also examine the abnormal stock returns using the event study methodology. Studying 447 companies, traded on the AMEX/NYSE and NASDAQ markets, from 1978 to 1990, they observe that the two day cumulative average abnormal return (CAAR hereafter) of the headquarters relocations has a value of 0.87%. The CAAR for the same interval is -1.00% for the plant relocations. In search of different motives associated with relocation decisions, they find a statistically significant stock market reaction to the "cost savings", "capacity reduction" and "facilities consolidation" motives at the levels of 2.29%, -2.24%, and -1.53%, respectively.

The study of Ghosh et al. (1995) differs from the previous studies since they give particular attention to the corporate headquarters relocations from New York City (NYC). Their data consist of 235 American publicly traded companies that relocated their corporate headquarters between 1966 through 1992. They indicate that NYC had the biggest loss (net 54 corporate headquarters) out of 160 usable observations. They too benefit from the event study methodology. Their results for the entire sample are not statistically significant and consist of negative abnormal returns. However, they find that the stock market statistically significantly and positively responds to the relocations that

are aimed to reduce costs, and significantly and negatively responds to the relocations that are prompted by managers' self-interest preferences. The results also indicate that when the relocation announcement does not include a stated reason, the market's response to that is statistically significant and negative. Moreover, statistically significant positive abnormal returns are observed for the companies that state the inadequate space reasons for their operations. The analysis of relocating companies out of NYC does not yield significant results. However, those companies moving from NYC because of cost-related reasons experience positive and statistically significant response in their stock prices.

While these authors study various factors that lead to relocation decisions, there is no consideration of political instability as a factor leading companies to relocation decisions. Their data consist of companies relocating locally (within a city, or a state), nationally (from one state to another).

2.4. Motives Underlying Relocation Decisions

Firms relocate their facilities and/or close plants in response to a number of factors. Chan et al. (1995) classify the reasons for relocation in five categories: Business expansions, cost savings or operating efficiency, capacity reduction, facilities consolidation and other reasons such as CEO change, labor disputes, and sale of facility. In the business expansion category, firms relocate in order to be closer to their markets, to expand into a new market, or to expand production capacity. The cost savings category

includes firms that relocate in order to reduce their operating costs, or to increase their production efficiencies. The capacity reduction category generally refers to the closure of a facility and moving the operations to another existing facility. The consolidation of facilities category includes firms that relocate and consolidate their facilities. The firms in this category generally undergo major reorganization or restructuring plans, and employee layoffs. The fifth category includes all the motives that are not stated in the first four motives. This category consists of motives such as sell of the facility, labor disputes, avoidance of a takeover, and government regulations. These authors argue that the first two motives seem to convey positive information about a firm's future investment opportunities, while the third and fourth ones carry negative information.

Ghosh et al. (1995) also employ a similar five-category classification; cost savings, business growth, business decline, sale of headquarters, and agency reasons. Unlike Chan et al. (1995), their cost savings category also includes the relocations that are undertaken for the consolidation of operations, lower taxes, and the proximity to consumers and suppliers. The business growth category includes the relocations that are associated with a need for additional space. The agency category consists of relocations that are prompted by manager's self interest. It also includes CEO's preference for location, and relocation to a new luxurious building. The business decline category contains firms that reduce their space requirements. The sale of headquarters category refers to the relocations where the old headquarters is sold.

3. Hypotheses

This thesis aims to shed light on several issues. The most important purpose is to investigate whether or not there is a premium due to political instability in Quebec, and if there is, to quantify it. Further, the effects of the information conveyed by the relocation announcements on the stock price performance are explored. Below, the hypotheses are stated upon the review of the relevant literature.

3.1. Information Hypothesis

Hypothesis 1: We expect that the market's reaction to relocation announcements is different from zero.

Fama (1991) states that if the financial markets are informationally efficient, i.e., if the market prices of financial securities reflect immediately all newly arriving information, then the value of a firm should change immediately as the news of changes in the firm's expected future cash flows and/or its discount rate becomes publicly available. That is, the value change will not wait until the actions are taken or decisions are implemented; rather, the value changes will be swift, following the announcement or arrival of the relevant news. Efficiency of financial markets has been one of the most rigorously researched topics. There is a substantial body of literature[23], indicating that

[23] For example, see Blackwell, Marr, and Spivey (1990), McConnell and Musceralla (1985), and Statman and Sepe (1989).

security prices adjust quite fast to newly arriving information.

Empirical evidence on the stock market's reaction to headquarters relocation announcements indicates a positive market reaction. Alli et al. (1991), and Ghosh et. al (1995) find positive CAARs for the (0, +1) window. Thus, on average, we expect to find significant CAARs as a reaction to the business relocation decisions.

3.2. Political Risk Premium Hypothesis

Hypothesis 2: Firms moving out of Quebec should experience positively higher abnormal returns than those moving out of any other region in Canada, thus the mean difference in the abnormal returns of these two samples of firms is a measure of political instability premium, and should be positive.

Businesses located in Quebec operate under a higher degree of uncertainty (due to the political instability) than businesses elsewhere in Canada. As discussed earlier, the government policies constitute a component of political instability. By promoting the sovereignty of Quebec, and enforcing laws such as Bill 101, the ruling party's policies have created political instability in the regional and national business environment. We presume that this political instability is reflected in the values of Quebec firms, since they are subject to it at a higher level than other firms located elsewhere in Canada.

In addition to political instability, many other factors such as taxes, labor and rent

costs can affect business relocations. In order to measure the impact of political instability, one needs to decompose the market reaction to such relocations into two components: the political instability component and the component related to other factors. This is accomplished by studying a control group, presuming that there should not be a significant difference in the market's reaction to business relocations from different regions of a country. This hypothesis will be supported if the mean difference and/or the median difference yields statistically significant and positive results in favor of the Quebec sample.

3.3. Hypotheses based on the Stated Reasons for Relocation

The hypotheses from H3a through H3f consider whether relocation decisions are positive or negative NPV projects. Blackwell et al. (1990) state that if the discounted value of expected cash flows from the facility in the new location is higher than the present value of expected cash flows of staying in the same location, the relocation decision should increase the firm's value. Yet the market response depends on both the NPV of the relocation decision and the information content of the announcement. Alli et al. (1991) argue that we should observe a positive market reaction to a relocation announcement if it is taken in the shareholders' interest. In other words, a positive response from investors should be observed, if they believe it is a positive NPV project. Chan et al. (1995) state that the stock market's response is related to both the type of investment decision and other information in the announcement. This response may depend on the stated reasons by the management, or the type of facility relocated in the

relocation announcements. We categorize the stated reasons into six major groups, following Chan et al. (1995). Specifically, in this set of hypotheses, we test whether the market's reaction depends on the stated reason in the relocation announcement.

Hypothesis 3a: Positive cumulative average abnormal returns are expected if the relocation decision is made for business expansion purposes.

If a firm is relocating to expand its operations, one expects to find positive market response. This is since this news would be interpreted by the market participants as an increase in the firm's future investment opportunities. Specifically, McConnell and Musceralla (1985) observe that stock market responds positively to the announcements of unexpected capital expenditure increases (such as investments in R&D, and plants) and negatively to the decreases. In this hypothesis, we expect to find positive CAARs in the sample of such relocations.

Hypothesis 3b: A positive cumulative average abnormal return is expected if the firm is relocating for cost savings or improvement in operating productivity.

If a firm is relocating to improve its operating efficiency or to reduce costs, investors will evaluate this as a positive signal for its future earnings and investment opportunities. Clearly stated, in this hypothesis we test whether the positive market response is tied to the business relocations that are motivated by cost. We expect to observe positive market responses to this kind of relocations. This is consistent with

Chan et al. (1995), and Ghosh et al. (1995).

Hypothesis 3c: Negative cumulative average abnormal returns are expected if the relocation decision is undertaken (stated) for the purposes of reduction in capacity or elimination of business activities.

This kind of announcements generally conveys negative information about the future prospects of a firm since they are interpreted as worsening business conditions for the firm. Therefore we expect to find that the firms citing such reasons for relocation experience negative stock market reaction. This is consistent with Blackwell et al. (1990) and Chan et al. (1995).

Hypothesis 3d: Negative cumulative average abnormal returns are expected if the relocation decision is undertaken (stated) for the consolidation of existing facilities purposes.

These announcements are generally associated with layoffs, and major restructuring plans; so they are believed to be the management's perception towards the firm's future investment opportunities. Consistent with the cited studies, we expect to find negative CAARs in our study.

Hypothesis 3e: Positive cumulative average abnormal returns are expected if the relocation decision is undertaken for other reasons.

The relocation announcements are perceived positively by investors on average. Therefore we expect to find a positive market reaction to these announcements on average.

Hypothesis 3f: Positive cumulative average abnormal returns are expected if no reason is stated in the relocation announcement.

Following the same logic of the previous hypothesis, we expect to find a positive market reaction to these announcements on average.

3.4. The Hypotheses based on the Type of Facility Relocated

Another component of the information stated in the relocation announcements is the type of facility relocated. In this set of hypotheses, we test whether the market's reaction to such announcements differs among different types of units relocated. We categorize the facility types into four groups; headquarters, divisions or regional headquarters, plants, and unspecified type of facility.

Hypothesis 4a: A positive cumulative average abnormal return is expected if the firm is relocating its corporate headquarters.

Alli et al. (1991) and Chan et al. (1995) document statistically significant and positive market's reaction to the headquarters relocations. Investors generally believe that a headquarter relocation has a worthy reason and will strengthen the future prospects of the firm, since it is a major change in its environment. We expect to find that firms in our sample experience positive stock performances.

Hypothesis 4b: Positive cumulative average abnormal returns are expected if the relocation decision is rendered for a regional headquarters or a division.

We expect a positive market's reaction to these announcements. Companies generally undertake these relocations to benefit from tax breaks, low rents, availability of qualified labor force, and other cost reducing factors.

Hypothesis 4c: Negative cumulative average abnormal returns are expected if a plant is relocated.

The costs associated with the relocation of a plant are apparently higher than those associated with other units. A plant relocation generally involves extensive costs such as transfer of the production equipment. Therefore, from the NPV perspective, and consistent with the previously cited studies, we expect to find negative abnormal returns

for this sample of firms.

Hypothesis 4d: A positive cumulative average abnormal return is expected if the firm does not report the type of unit that is being relocated.

Similar to the explanations of the hypotheses H3e and H3f, we expect to find a positive market's reaction to these announcements on average.

4. Data and Sample

4.1. Data

The data used in this thesis covers the period from January 1970 through December 1997. The beginning of the sample was chosen as 1970 mostly because the separation drive appears to have gained its momentum since the early 70's. *The Financial Post was* searched from 1970 to 1991, and the available electronic databases[24] were searched for the rest of the period. Keywords "relocation" and "move"[25] were used when searching the electronic databases. A part of data collection effort was devoted to identifying the relocation places, the announcement date, the unit that is moved, and the reasons underlying the relocations. Daily stock prices were retrieved from the Western Toronto Stock Exchange (TSE) database.

A total of 231 relocation announcements were identified. Out of this sample, 4

[24] These databases are as following; CBCA Full Text 1993 - 1995, Canadian Database, The Globe & Mail Group 1991-1997, and Canadian News Disk 1992-1997.

companies were excluded from the sample due to insufficient information. In addition, the relocation event took place prior to 1975 for 42 companies. This decreased the number of our sample to 183 companies[26]. Ninety-five of them are not traded either on the Toronto Stock Exchange or any other Canadian stock exchange. Therefore, our sample decreased to 88 companies. Furthermore, no stock price data could be found for 13 companies in this sample. However, 12 name changes are detected from "*The Financial Post Survey of Predecessor and Defunct Companies*". The final sample consists of 87 companies whose stocks are publicly traded on the TSE and for which return data is available. This sample constitutes the companies moved within Canada. The subsample of the companies, which relocated their facilities from Quebec to another place in Canada, was also shrunk from 47 to 20. Therefore, these 20 companies are considered as the final sample. A control sample of companies whose relocation operations occurred within Canada other than in Quebec is constructed. This control group enables us to comparatively study the effect of political instability on the valuation of companies relocating from Quebec.

Ghosh et al. (1995) mention that the reasons stated in the announcements represent the best proxy for categorization. Likewise, Chan et al. (1995) remark that they use the stated-by-management reasons instead of true but unobservable ones. The contents of the announcements generally do not contain political instability in Quebec as a stated reason for relocating, potentially due to their fear of customer backlashes as

[25] Relocat*, mov*, i.e., derivations of "relocation" and "moving".
[26] The Western database starts from 1975, hence the stock price data prior to 1975 is unavailable.

happened to Zellers[27].

4.2. Sample Construction

We breakdown the entire sample of 87 firms into three major categories based on the region the firm has moved from, the stated motive in the announcement, and the type of facility relocated. The Quebec[28] sample includes 20 firms that relocated their facilities out of Quebec. Similarly defined, the Montreal sample consists of 18 companies that have moved out of Montreal. The corresponding control groups are the non-Quebec and the Toronto samples. The non-Quebec sample includes 67 relocations that occurred outside Quebec, while the Toronto sample has 20 firms that relocated outside Toronto. We also construct a non-Quebec/non-Toronto, and a non-Toronto sample. The non-Quebec/non-Toronto sample includes 47 relocations that occurred outside Quebec and Toronto. The non-Toronto sample has 67 companies.

We construct six sub-samples according to the stated motives in the announcements. We follow Chan et al.'s (1995) study in categorizing the relocations[29]. The business expansion-related relocations sample consists of 20 firms. Similarly, the

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[27] In some announcements, the columnists of the newspapers commented the separatism in Quebec indeed was the main reason for the relocation. For example, Gary Lukassen, executive vice-president and chief operating officer of Hudson's Bay, announced the cost cuttings for the move of the Zellers' headquarters. However, the columnist Francois Shalom, who wrote about the relocation decision, stated the following in his column: "Lukassen toed the line walked by retailers, who rarely mention the political dimensions of a decision for fear of a backlash from customers.".

[28] The Quebec, Montreal, and Toronto samples include the firms that relocated outside of Quebec, Montreal, and Toronto, respectively. The non-Quebec sample includes the firms that relocated from a region other than Quebec. The non-Toronto sample includes the firms that relocated from a region other than Toronto. The non-Toronto/non-Quebec sample includes the firms that relocated from a region different from Toronto and Quebec.

[29] Ghosh et al. (1995) also analyze the effects of stated motives on stock market's response to relocations. However, their method of categorizing is not feasible for our sample of 87 firms since the stated reasons in our sample are very different from theirs .

cost savings-related relocations sample has 20 firms, the capacity reduction-related relocations sample has 11 firms, the facilities consolidation-related relocations sample has 13 firms, and the other-reasons-related relocations sample has 8 firms. Finally, the 'unspecified motive' sample has 15 firms.

We also set up four more subsamples based on the type of facility relocated, following Chan et al. (1995). The headquarters subsample includes 28 firms that have relocated their corporate headquarters, the unit sample consists of 28 firms that relocated their regional headquarters or divisions, while the plant sample has 26 firms. For 5 firms, the facility type that was relocated could not be identified.

5. Methodology

5.1. Event Study Methodology

This thesis employs the event study methodology to capture the market's changing perception towards the value of a relocating firm. This methodology assumes that security returns follow a single factor market model,

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \in_{jt}$$

where R_{jt} is the rate of return of the common stock of the j^{th} firm on day t; R_{mt} is the rate of return of a market index on day t; $\in_{jt}$ is a random variable with an expected value of

zero[30]. β_j measures the sensitivity of stock returns of the firm j to the market index returns. Accordingly, the abnormal return for the firm j on day t is defined as,

$$A_{jt} = R_{jt} - (\hat{\alpha}_j + \hat{\beta}_j R_{mt})$$

where the regression coefficients $\hat{\alpha}_j$ and $\hat{\beta}_j$ are the ordinary least squares estimates of α_j and β_j.

The test statistics follow Patell's (1976) study. Under the null hypothesis that each A_{jt} has a mean of zero and a variance of $\sigma^2{}_{A_{jt}}$, the maximum likelihood estimate of the variance, $s_{A_{jt}}{}^2$, is,

$$s^2_{A_{jt}} = s^2_{A_j}\left[1 + \frac{1}{D_j} + \frac{(R_{mt} - \overline{R}_m)^2}{\sum_{k=1}^{D_j}(R_{mk} - \overline{R}_m)^2}\right]$$

where

$$s^2_{A_j} = \frac{\sum_{k=1}^{D_j} A^2_{jk}}{D_j - 2},$$

R_{mt} is the observed return on the market index on day t, $\overline{R}_m$ is the mean market return over the estimation period, and D_j is the number of non-missing returns in the estimation period. Further, the standardized abnormal return (SAR_{jt}) is defined as,

$$SAR_{jt} = \frac{A_{jt}}{s_{A_{jt}}}.$$

Under the same null hypothesis as above, each SAR_{jt} follows a Student's t

[30] By construction, $\in_{jt}$ has a constant variance, is assumed to be uncorrelated with R_{mt}, and not autocorrelated.

distribution with D_j - 2 degrees of freedom. By summing the SAR_{jt} across the sample, one obtains

$$TSAR_t = \sum_{j=1}^{N} SAR_{jt} .$$

The expected value of $TSAR_t$ is zero, and its variance is

$$Q_t = \sum_{j=1}^{N} \frac{D_j - 2}{D_j - 4}.$$

The test statistic for the null hypothesis that $CAAR_{T_1,T_2} = 0$ is

$$Z_{T_1,T_2} = \frac{1}{\sqrt{N}} \sum_{j=1}^{N} Z^j_{T_1,T_2} ,$$

where

$$Z^j_{T_1,T_2} = \frac{1}{\sqrt{Q^j_{T_1,T_2}}} \sum_{t=T_1}^{T_2} SAR_{jt} ,$$

and

$$Q^j_{T_1,T_2} = (T_2 - T_1 + 1)\frac{D_j - 2}{D_j - 4}.$$

Under cross-sectional independence of $Z^j_{T_1,T_2}$ and other conditions stated in Patell[31] (1976), Z_{T_1,T_2} follows the standard normal distribution under the null hypothesis that $CAAR_{T_1,T_2} = 0$.

Particularly, we use the TSE 300 equally weighted Index[32] as the market portfolio in the abnormal return calculations. An 86-day sample period surrounds each event date.

[31] For further details, see "Eventus: Users Manual", Cowan Research Corp., http://www.eventstudy.com, p97-111.

The estimation period is from day -75 to day -11 and the event period is between (-10, 10) where event date is day 0. Day zero ($t = 0$) is defined as the date the relocation announcement appeared in the media reports. If there is more than one announcement, the earliest one is treated as day zero (Chan et al., 1995).

The equality of means test and the Wilcoxon 2-sample test are employed in search of the political risk premium. Further, a non-parametric test[33], the generalized sign test is applied to the sample. The null hypothesis for this test is that the fraction of positive returns during the event period is 50%.

5.2. Regression Models

Eight multiple regression models[34] are constructed. CAAR for the window (0, +1) is the dependent variable in all the regression models, while all the independent variables are coded as dummy variables. These regression models are presented below in detail;

$$CAAR(0,1) = \alpha + \beta_1 Headquarters + \beta_2 Division + \beta_3 Plant + \varepsilon \qquad (1)$$

A cross-sectional regression estimation using the Ordinary Least Squares (OLS) is undertaken to estimate whether the type of facility has an effect on the abnormal returns. By construction, intercept captures the 'unspecified type of facility' variable.

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[32] We also repeat all of the event study tests using the TSE value weighted index. However, we do not report those results.

[33] Unlike a non-parametric test, t-test assumes that stock returns have a Student's t distribution, and that stock returns across the sample of securities are independent of one another. Also, for a more detailed explanation for the generalized

$$CAAR(0,1) = \alpha + \beta_1 Bus\exp + \beta_2 Costsav + \beta_3 Capred + \beta_4 Consol + \beta_5 Other + \varepsilon \quad (2)$$

A regression analysis is employed to see whether the stated relocation reasons effect abnormal returns. By construction, intercept is the 'unspecified type of facility' variable. Busexp, Costsav, Capred, Consol, and Other represent the stated reasons business expansions, cost savings, capacity reduction, facilities consolidation, and other reasons, respectively.

$$CAAR(0,1) = \alpha + \beta_1 Headquarters + \beta_2 Divison + \beta_3 Plant + \beta_4 Bus\exp + \beta_5 Costsav + \beta_6 Capred + \beta_7 Consol + \beta_5 Other + \varepsilon \quad (3)$$

A regression model including both unit types and stated reasons is constructed to see whether both factors effect abnormal returns. By construction, the 'unspecified type of facility' and the 'unspecified reason' variables are presented in the intercept. The independent variables are explained earlier.

$$CAAR(0,1) = \alpha + \beta_1 Montreal + \beta_2 Toronto + \beta_3 Ca\lg ary + \beta_4 Edmonton + \beta_5 Vancouver + \varepsilon \quad (4)$$

Regression models 4 and 5 are constructed to see the effects of geographic

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sign test, see Sprent (1989).

[34] We also use the CAAR (0,2) as the dependent variable and repeat all the regression models.

regions. Regression model 4 examines these effects at local level. By construction, intercept refers to the cities other than those five major cities. Independent variables refer to the major cities.

$$CAAR(0,1) = \alpha + \beta_1 Quebec + \beta_2 Ontario + \beta_3 Alberta + \beta_4 BritCol + \varepsilon \quad (5)$$

Regression model 5 examines the geographic effects at provincial level. By construction, intercept refers to the provinces other than those four sample-sized provinces. Independent variables refer to those four provinces. Britcol refers to British Columbia.

$$CAAR(0,1) = \alpha + \beta_1 Service + \beta_2 Manufac + \beta_3 \mathrm{Re}source + \varepsilon \quad (6)$$

A regression model including industry dummies as independent variables is employed to provide evidence on whether industry type has any affect on abnormal returns. By construction, intercept captures the category 'other'. Service, Manufac, and Resource dummy variables refer to the service, manufacturing, and resource industries, respectively.

$$CAAR(0,1) = \alpha + \beta_1 \mathrm{Re}f95 + \varepsilon \quad (7)$$

Further, another regression model is developed to see whether the firms left Quebec in the 1995 referendum year explain abnormal returns. Ref95 takes the value of 1

if the firm moved out of Quebec during 1995. The previous referendum, which was held in 1980, is not included in the model since there was no relocation out of Quebec during that year.

$$CAAR(0,1) = \alpha + \beta_1 \mathrm{Re}f95 + \beta_2 ElecPQ1 + \beta_3 ElecPQ2 + \varepsilon \quad (8)$$

This regression model includes both referendum and the election years that Parti Quebecois became the winning party. ElecPQ1 takes the value of 1 if a firm left Quebec during the year PQ won the election (1981). Similarly, ElecPQ2 takes the value of 1 if a firm left Quebec during the year PQ won the election (1994). By construction, the intercept captures the rest of the relocations in the entire sample.

6. Results

6.1. Descriptive Statistics

The characteristics of the sample are reported in Tables 1 through Table 3[35]. Table 1 presents the geographical distribution of the sample both at the local and provincial levels. Montreal experienced the biggest net loss among the major Canadian cities, -15 companies. Edmonton follows Montreal with a net loss of 5 companies[36]. The highest relocation activity seems to have stemmed from Toronto with 41 business relocations: 17 companies moved into the city while 20 companies moved out. Table 1 also reveals that

[35] The distributions regarding the relocations out of Montreal and Quebec by year are provided in Appendix 2, both for the initial sample of 231 companies and final sample of 87 companies.
[36] Most of these Edmonton-based companies moved to Calgary.

Calgary has become one of the primary choice of relocation. This may be due to the lower taxes and the influence of the resource companies -on service industry- in the large and expandable Calgary downtown area.

Table 1. Distribution of Relocations by Region

Panel a. Distribution of Relocations by Major Cities

City	Gained	Lost	Within	Net Gain
Montreal	4	18	2	-14
Toronto	17	20	4	-3
Calgary	15	4	1	11
Edmonton	2	7	1	-5
Vancouver	5	4	0	1

Panel b. Distribution of Relocations by Province

Province	Gained	Lost	Within	Net Gain
Quebec	5	20	5	-15
Ontario	23	14	17	9
Alberta	12	4	8	8
British Columbia	5	6	1	-1
Nova Scotia	4	1	0	3
Newfoundland	0	2	0	-2

At the provincial level, a similar pattern is observed. A net of 15 companies left Quebec, while Ontario and Alberta gained in terms of relocating. Overall, the sample depicts the trend that companies have been relocating out of Quebec, especially out of Montreal.

Table 2. Distribution of Relocations by Industry and Stated Reason for Relocation

Panel a. Distribution of Relocations by Industry

Industry	Headquarters	Division	Plant	No Statement	Total
Entire sample	28	28	26	5	87
A. Service Industries	14	16	3	2	35
Financial Services	4	10	1	0	15
Merchandising	1	1	0	0	2
Communications&Media	3	1	1	1	6
Transportation and Environmental services	3	3	0	0	6
Other Services	3	1	1	1	6
B. Manufacturing Industry	3	8	20	1	32
Consumer Products	2	2	15	0	19
Industrial Products	0	5	4	1	10
Other Manufacturing	1	1	1	0	3
C. Resource Industries	9	3	3	2	17
Oil&Gas	4	1	2	2	9
Metals&Minerals	2	2	1	0	5
Paper&Forest Products	3	0	0	0	3
Other	2	1	0	0	3

Table 2 continued

Panel b. Distribution of Relocations by Stated Reason

Stated Reason	Headquarters	Division	Plant	No Statement	Total
Business Expansions	10	8	1	1	20
Cost Savings	9	6	5	0	20
Capacity Reduction	0	3	8	0	11
Facilities Consolidation	1	6	4	2	13
Other Reasons	4	1	3	0	8
Unspecified Reason	4	4	5	2	15

Table 2 exhibits the industry classification and the stated reasons for relocation of the companies according to the type of unit. Five companies did not report which unit they relocated. Panel a. displays the distribution of the sample companies by industry. The distribution appears to be evenly distributed. Plant relocations are mostly observed in the manufacturing industry as expected, while the division and headquarters relocations generally belong to the service industry. The distribution of the sample companies by the stated reasons is displayed in Panel b. The definition of each reason is given earlier. Managers attribute a large majority of their relocation decisions (46%) to business expansions and cost reductions with rest being for reason related to restructuring. Panel b. appears to be relatively evenly distributed. Fifteen companies did not cite any reason in the announcement of relocation. It is also interesting that the headquarter relocations generally take place for the purposes of business expansions and cost savings.

Table 3.Distribution of Relocations by Year

Period	No of Relocation	Percentage (%)
1975-1979	14	16
1980-1984	15	17
1985-1989	7	8
1990-1994	18	21
1995-1997	33	38
TOTAL	87	100

Table 3 provides the distribution of the sample over time. The entire period is divided into five sub-periods for simplicity. This table shows that there is some clustering of announcements between the years 1995-1997, partly due to the availability of electronic databases during this period and hence a larger number of observations.

6.2. Event Study Results

In this section, the results from the event study are presented. First, we examine the stock market's reaction to relocation announcements for each geographic subsample. Then, we investigate whether there is a difference in how the stock market responds to business relocations for different provinces and major cities. This part attempts to find evidence supporting the first and second hypotheses. Third, we examine whether the stock market's reaction to such decisions differs by the type of facility relocated and the management's stated reason. Finally, the results of the regression analyses are reported and discussed.

6.2.1 Event Study Results for the Geographic Subsamples

The event study results regarding the Quebec, Montreal, and the control samples of Toronto and the non-Quebec are given in Tables 4 through Table 6[37]. We provide CAARs and associated z values, median cumulative abnormal returns, number of positive versus negative abnormal returns and the generalized sign test results for each window. The daily event-period abnormal returns for these subsamples are reported in Appendix 3.

Table 4 exhibits the event study results for the Quebec and the Non-Quebec samples. The results show that the firms relocating outside the Quebec experience positive and, in general, significant stock market response. The CAAR for the window (0, +1) is 0.77% and is statistically significant at 10% level. The generalized sign test shows that 13 out of 20 firms in this sample experience positive abnormal returns. The CAAR for the window (0, +2) is 1.48% and is significant at 5%. The sign test for this window is also significant at 5%. Further, the CAAR (-2, 2) is 2.06% and is significant at 1%. Its sign test is also significant at the 5%. The non-parametric sign test shows that the observed CAARs are not influenced by outliers. We also observe that in Appendix 3 that DAR (1) and DAR (2) are statistically significant and positive. An interesting finding in

[37] We also classify the relocations according to which city the firms have relocated to. We only examine the Calgary sample, i.e., the firms that have relocated to Calgary and the Toronto sample due to insufficient sample size. We find that the Calgary and Toronto samples undergo positive market valuations. For example, the CAAR for the (0, +1) window is 1.75% and statistically significant at 1% for the Calgary sample. The CAAR for the (0, +1) window is 0.05% for the Toronto sample. We also repeat the mean and median tests for these samples. The results indicate that some windows in the Calgary (Toronto) sample have statistically significantly higher positive CAARs and cumulative median abnormal returns than those in the non-Calgary (non-Toronto) sample. For eaxmple, we find that the CAAR (0, +2) is significantly higher for the Calgary sample than that for the non-Calgary sample at 7%. We also find that the CAAR (0,1) and CAAR (0,2) in the Calgary sample are statistically significantly higher than those in the Toronto sample.

Panel a is that both CAAR for the windows (-10, +10) and (-10, -1) are statistically significant and positive. The positive and significant CAARs for the pre-event windows suggest that there might be a leakage of information regarding the relocation decision before it is officially announced. This early response might be due to rumors about the relocation decisions[38].

Table 4. The Event-Study Results for the Quebec and the Non-Quebec Samples

Panel a. The Quebec Sample

Days	Cumulative Average Abnormal Return Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	5.09%	4.64%	5.26%	3.09**	13:7	1.45
(-10,-1)	3.06%	2.85%	4.02%	2.75**	16:4	2.79>>
(0,+10)	2.02%	1.79%	1.95%	1.64	13:7	1.45
(-2,0)	0.66%	0.75%	0.52%	1.32	13:7	1.45
(-1,0)	-0.14%	-0.11%	-0.27%	-0.24	8:12	-0.79
(0,+1)	0.77%	0.80%	0.91%	1.74$	13:7	1.45
(0,+2)	1.48%	1.39%	1.31%	2.44*	15:5	2.34>
(-1,+1)	0.55%	0.48%	0.44%	0.87	13:7	1.45
(-2,+2)	2.06%	1.94%	1.75%	2.63**	15:5	2.34>

[38] In the process of data gathering, there appeared to be a clear indication in some of the announcements that information might have been leaked to the market prior to the official announcement.

Table 4 continued

Panel b. The Non-Quebec Sample

Days	Cumulative Average Abnormal Return Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	0.20%	1.07%	-0.02%	1.16	33:31	0.65
(-10,-1)	-0.50%	-0.37%	-0.08%	-0.55	31:30	0.52
(0,+10)	0.71%	1.44%	-0.29%	2.10*	32:32	0.40
(-2,0)	-0.04%	-0.18%	-0.62%	-0.51	22:37	-1.57
(-1,0)	0.42%	0.31%	-0.01%	1.03	28:30	0.12
(0,+1)	0.59%	0.68%	0.10%	2.25*	33:31	0.65
(0,+2)	0.65%	0.94%	0.13%	2.56*	35:29	1.15
(-1,+1)	0.42%	0.58%	-0.30%	1.60	30:34	-0.10
(-2,+2)	0.02%	0.35%	-0.39%	0.77	30:34	-0.10

$, (,) significant at .10 *, <, > significant at .05

, <<, >> significant at .01 *, <<<, >>> significant at .001

The event study results for the non-Quebec sample are reported in Panel b. The CAAR for the window (0, +10) is 0.71% and statistically significant at 5%; however the other post- and pre-event windows (except for the (0, +1) and (0, +2) windows) do not reveal statistically significant results. Particularly, the CAAR for the window (0, +1) is 0.59% and CAAR for the window (0, +2) is 0.65% and both are statistically significant at 5%. Investors react to business relocation announcements that originate from outside of Quebec positively. However, the sign test does not produce any significance for this sample. In fact, the (positive:negative) column shows that the distribution of abnormal returns appears rather even. This finding suggests that the observed significance levels are probably affected by some outliers in the sample. Further, the DAR (-6), DAR (-3),

DAR (-2), DAR (0) and DAR (6) are statistically significant. Another interesting finding is revealed when we compare Panel a to Panel b. When we move from Panel a to Panel b, the significance levels decrease substantially. Further, the signs of CAARs around some windows change. This result indicates that the stock market's reaction to the firms in the Quebec sample is stronger[39].

The event study results for the Montreal and Toronto samples are given in Table 5, Panel a. and Panel b., respectively. The significance levels and cumulative average and median abnormal returns are slightly higher in the Montreal sample. We find that CAAR for the window (0, +1) is 0.98% and is statistically significant at 5%. The sign test is significant at 5% as well. CAAR for the window (0, +2) is even bigger, 1.68%, and is statistically significant at 1%. The sign test indicates that 15 out of 18 firms experience positive market response. This finding proves that investors evaluate the Montreal-originated relocations as positive events. Again, a possible leakage of information is observed. The CAAR for the (-10, -1) window is 2.90%, and statistically significant at 5%. It also has a statistically significant sign test result at 5%.

[39] The formal mean and median tests are undertaken later.

Table 5. The Event-Study Results for the Montreal and Toronto Samples

Panel a. The Montreal Sample

Days	Cumulative Average Abnormal Return: Equally Weighted	Cumulative Average Abnormal Return: Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	5.43%	4.76%	5.26%	2.93**	12:6	1.51
(-10,-1)	2.90%	2.53%	4.02%	2.26*	14:4	2.45>
(0,+10)	2.52%	2.23%	2.08%	1.89$	12:6	1.51
(-2,0)	0.55%	0.63%	0.52%	1.03	11:7	1.04
(-1,0)	-0.17%	-0.11%	-0.27%	-0.22	7:11	-0.85
(0,+1)	0.98%	1.12%	1.08%	2.24*	13:5	1.98>
(0,+2)	1.68%	1.64%	1.44%	2.66**	15:3	2.92>>
(-1,+1)	0.69%	0.70%	0.49%	1.16	12:6	1.51
(-2,+2)	2.12%	1.97%	1.75%	2.48*	14:4	2.45>

Panel b. The Toronto Sample

Days	Cumulative Average Abnormal Return: Equally Weighted	Cumulative Average Abnormal Return: Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	-2.11%	0.46%	-3.50%	0.33	9:9	0.30
(-10,-1)	-3.15%	-3.10%	-2.95%	-2.24*	5:13	-1.59
(0,+10)	1.03%	3.56%	-0.57%	2.55*	9:9	0.30
(-2,0)	0.99%	0.41%	-0.06%	0.59	6:9	-0.50
(-1,0)	1.52%	1.03%	0.36%	1.73$	10:5	1.57
(0,+1)	0.00%	1.17%	0.13%	1.89$	9:9	0.30
(0,+2)	-0.93%	1.38%	0.33%	1.79$	12:6	1.72)
(-1,+1)	0.43%	1.26%	-0.15%	1.69$	9:9	0.30
(-2,+2)	-1.03%	0.85%	-0.49%	0.90	9:9	0.30

$, (,) significant at .10 *, <, > significant at .05

, <<, >> significant at .01 *, <<<, >>> significant at .001

Panel b. reveals that the market reaction's to the Toronto sample is somewhat ambiguous. The daily abnormal returns in the event period are mostly negative. The abnormal returns are mostly realized within two days around the event date. CAAR for the window (0, 2) is -0.93%, and statistically significant at 10%. CAAR for the window (-1, 1) is 0.43% and also statistically significant at 10%. Overall, the realized CAARs and their significance levels for the Toronto sample are much lower that those for the Montreal sample. We also find interesting results when we compare the Montreal and the Toronto samples. The CAAR for the window (-10, +10) is 5.43% and statistically significant at 1%, the CAAR for the window is (-10, -1) 2.90% and statistically significant at 5%, and the CAAR for the window (0, +10) is 2.52% and statistically significant at 10% for the Montreal sample. However, for the Toronto sample, the CAAR for the window (-10, +10) is –2.11%, the CAAR for the window (-10, -1) is –3.15% and statistically significant at 5%, the CAAR for the window (0, +10) is 1.03% and statistically significant at 5%. These findings suggest that there is a substantial difference between the observed cumulative average abnormal returns of the Montreal and the Toronto samples.

The event study results for the non-Toronto and non-Toronto/non-Quebec samples are provided in Table 6, Panel a. and Panel b., respectively. The non-Toronto sample firms experience significant abnormal returns. The CAAR for the window (0, +1) is 0.81% and statistically significant at 5%. The CAAR for the window (0, +2) is 1.35% and statistically significant at 1%. Further, the CAAR (-2, +2) is significant at 10%. We observe that the DAR (-10), DAR (-4), DAR (-3), DAR (1), DAR (2), and DAR (3) are

significant. We also observe a difference between the CAARs of the non-Toronto, and the non-Quebec/non-Toronto samples. The CAAR for the window (-10, +10) is 2.32% and statistically significant at 1%, the CAAR for the window (-10, -1) is 1.24% and statistically significant at 5%, the CAAR for the window (0, +10) is 1.07% and statistically significant at 10% for the non-Toronto sample. For the non-Quebec/non-Toronto sample, the CAARs for the windows (-10, +10), (-10, -1), (0,+10) are 1.03%, 0.37%, and 0.65%, respectively. We do not observe significant results associated with the CAARs of these windows.

Table 6. The Event-Study Results for the Non-Toronto and Non-Quebec-Non-Toronto Samples

Panel a. The Non-Toronto Sample

Days	Cumulative Average Abnormal Return: Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	2.32%	2.37%	0.79%	2.69**	37:29	1.28
(-10,-1)	1.24%	1.31%	1.45%	2.16*	42:23	2.65>>
(0,+10)	1.07%	1.06%	1.18%	1.66$	36:30	1.03
(-2,0)	-0.07%	-0.01%	-0.45%	-0.04	29:35	-0.46
(-1,0)	-0.01%	0.00%	-0.26%	0.01	26:37	-1.10
(0,+1)	0.81%	0.61%	0.29%	2.20*	37:29	1.28
(0,+2)	1.35%	0.99%	0.69%	2.93**	38:28	1.52
(-1,+1)	0.49%	0.39%	0.08%	1.18	34:32	0.54
(-2,+2)	0.97%	0.75%	0.19%	1.76$	36:30	1.03

Panel b. The Non-Toronto-non-Quebec Sample

Days	Cumulative Average Abnormal Return Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	1.03%	1.22%	0.11%	1.16	24:22	0.57
(-10,-1)	0.37%	0.52%	1.19%	0.73	26:19	1.32
(0,+10)	0.65%	0.70%	-0.18%	0.90	23:23	0.28
(-2,0)	-0.40%	-0.39%	-0.86%	-0.94	16:28	-1.54
(-1,0)	0.03%	0.06%	-0.26%	0.18	18:25	-0.80
(0,+1)	0.84%	0.51%	0.10%	1.48	24:22	0.57
(0,+2)	1.31%	0.79%	-0.16%	1.90$	23:23	0.28
(-1,+1)	0.46%	0.35%	-0.30%	0.84	21:25	-0.31
(-2,+2)	0.48%	0.17%	-0.39%	0.36	21:25	-0.31

$, (,) significant at .10 *, <, > significant at .05

, <<, >> significant at .01 *, <<<, >>> significant at .001

There is only one statistically significant window (CAAR for (0, +2)) in Panel b. This suggests that the highly significant CAARs in the entire sample[40] of 87 companies is driven by the Quebec sample. Specifically, when we move from the non-Quebec sample to the non-Toronto/non-Quebec sample, we observe that the significance associated with the realized CAARs disappear. At first, it seems that the Toronto sample drives the entire sample of 87 companies. But this is not quite true. We observe the same phenomenon when we move from the non-Toronto sample to the non-Toronto/non-Quebec sample. However, the non-Toronto sample has substantially higher significance than the non-Quebec sample has. This observation brings credibility to the possibility that the

[40] We also examine the entire sample of 87 companies. However, we discuss the results for the entire sample later in section 7.2.3. The event study results for the entire sample is reported in Appendix 4.

significance in the CAARs observed in the entire sample is more likely due to the Quebec sample.

6.2.2. Searching for Political Risk Premium[41]

In this part of the thesis, the results of the mean and median tests for hypothesis 2 are reported. The summarized results of the mean and the median difference tests for the Quebec vs. the non-Quebec and the Montreal vs. the Toronto samples are provided in Table 7 Panel a. and Panel b., respectively. We provide the mean differences, the p-values associated with them, and the z-values associated with the median values of the selected windows. Having obtained the event study results, we move onto comparing the mean and median values of some event windows for the Quebec and the non-Quebec samples. Here we look at a possible provincial difference. Then, we extend our analysis to differences between Montreal and Toronto. Toronto is chosen as the control group since it represents the biggest local economy in Canada.

The mean difference tests indicate that, in general, there is a substantial difference in CAARs between the Quebec and non-Quebec samples. Specifically, in the (-10, +10) interval, the difference between the CAARs of the Quebec and non-Quebec samples is 0.049 and is significant at 7%. The mean difference in the (-10,-1) window is 0.035 and significant at 1%. The mean difference in the (-2, +2) window is 0.02 and it is also significant at 9%. For the other windows, there is a visible difference in the CAARs of two samples, but we do not observe any statistical significance associated with them. For

[41] Although we are using the term political risk premium, it is used for a lack of a better term. We note that

example, in the (-5, +5) window (not reported), the mean difference is 0.019 (0.027-0.008), but it has a p-value of 0.25. One interesting finding is that, similar to the event study results, we observe a negative mean difference in the (-1,0) interval, of -0.006. This is the only window that we observe a negative difference in the CAARs. The results of the median tests are similar to those of the mean difference tests. The Wilcoxon non-parametric test produces significant results for the windows (-10, +10), (-10,-1), (-2, +0), and (-2, +2). The differences in the median values between the Quebec and non-Quebec samples in these windows are statistically significant at 5%, 1%, 5% and 5%, respectively. These results suggest that the results of the mean difference tests are verified and strengthened. Overall, the findings provide evidence that investors regard the Quebec-originated relocations positively in a statistically detectable manner. These results are consistent with hypothesis 2.

The results of the mean and the median tests for the Montreal and Toronto samples are reported in Panel b. The results of the mean difference tests between the Montreal and Toronto samples present a similar trend to that of the Quebec and the non-Quebec samples. The firms leaving Montreal experience positively higher stock returns than the firms moving out of Toronto. The associated significance levels are higher than the previous comparison for the Quebec and the non-Quebec samples. These results affirm the results of the previous comparisons. Particularly, we find that the CAAR (-10, +10) in the Montreal sample is significantly and positively different than that of the Toronto sample. The difference is 0.072 (0.054-(-0.018)) and is significant at 0.7%. The mean difference in the (-10, -1) window is 0.055 (0.029-(-0.026)) and is significant at

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to obtain this premium, one should calculate the cost of capital of the sample firms.

Table 7. The Results from the Mean Difference and the Non-parametric Median Difference Tests on Various CAAR Windows

Panel a. The Quebec Sample versus the Non-Quebec Sample[1, 2]

Interval	Mean	Prob > |T|	Wilcoxon 2-sample test Prob > |Z|
(-10, 10)	0.04901	0.07100	0.0341
(-10, -1)	0.03534	0.00610	0.0099
(0,10)	0.01381	0.55860	0.3586
(-2,0)	0.00714	0.34150	0.0635
(-1,0)	-0.00568	0.41670	0.8458
(0,1)	0.00235	0.81630	0.5635
(0,2)	0.00906	0.41920	0.1897
(-2,2)	0.02049	0.08720	0.0142

Panel b. The Montreal Sample versus the Toronto Sample

Interval	Mean	Prob>|T|	Wilcoxon 2-sample test Prob > |Z|
(-10,10)	0.07248	0.00730	0.0097
(-10, -1)	0.05490	0.00270	0.0054
(0,10)	0.01887	0.44110	0.5107
(-2,0)	-0.00439	0.68870	0.6513
(-1, 0)	-0.01707	0.11370	0.1752
(0, 1)	0.01170	0.43890	0.7880
(0, 2)	0.02686	0.13310	0.4214
(-2, 2)	0.03199	0.09490	0.0634

[1] The mean differences are obtained through subtracting the mean and the median values of the non-Quebec (Toronto) sample from those of the Quebec (Montreal) Sample.
[2] The results for mean differences take into account whether the variances of the two distributions (Quebec vs. Non-Quebec and Montreal vs. Toronto) are the same or not.

0.2%. Subsequently, the mean difference (-2, +2) window is 0.032 (0.021-(-0.011)) and is

significant at 9%. For the other windows, again, we mostly observe insignificant but discernibly higher CAARs for the Montreal sample. We again find negative mean difference in the (-1, 0) interval, -0.0171.

The results of the Wilcoxon test are reported in Table 7 Panel b. They are similar to the results of the mean difference tests: The (-10, +10), (-10, -1), and (-2, +2) windows have significantly higher median cumulative abnormal returns in favor of the Montreal sample. They are significant at 1%, 1%, and 10%, respectively. These results strengthen the mean difference test results.

Thus, we conclude that there is a statistically significant difference in stock market reaction to the relocation decisions of the Quebec and non-Quebec samples. This difference is in favour of the Quebec-originated business relocations. Further, this conclusion is verified by the comparison between the Montreal and Toronto samples.

6.2.3. Breakdown of the Entire Sample based on the Motives Underlying Relocation Decisions and on the Type of Facility

The event study results for the entire sample of 87 companies are presented in Appendix 4. Although the realized abnormal returns appear to be small in magnitude, they are highly significant. A strong market reaction is observed, especially in the post-event period. The CAAR for the window (0, +1) is 0.62% and statistically significant at 1%. The CAAR for (0, +2) takes the value of 0.84% and is statistically significant at 0.1%. Its corresponding sign test is also significant at 5%. 50 out of 84 firms experience

positive abnormal returns in this interval. Further, we observe that DAR (0), DAR (1), and DAR (2) are significant. Together with the results from the regional samples, these findings support hypothesis 1, which states that there is a significant market response to the announcements of business relocations. Another finding is that DAR (6) is 0.48% and statistically significant at 5%. This suggests that investors adjust to the new relocation information slowly. This pattern is also reflected onto CAAR for (0, +10): It is 1.02% and statistically significant at 1%. The sign test statistics for this interval is also statistically significant at 5%.

The event study results for each type of facility relocated are presented in Appendix 5 from Panel a. through Panel d. Panel a. reports the stock market's reaction to the headquarters relocation announcements. We observe highly significant CAARs in almost all intervals. We find that the CAAR for (0, +1) is negative (-0.01%), and statistically significant at 10%. The CAAR (-1, +1) is 0.65% and statistically significant at 5%. The DAR (0) is 0.59%, and statistically significant at 10%. The DAR (2) is also statistically significant and positive. It has a value of 0.90%. The CAAR for (-10, -1), and the CAAR for (0, +10) are statistically significant and positive. However, we do not observe any evidence of a possible leakage, or inefficiency in the daily abnormal returns. These results are consistent with the existing studies and with hypothesis 4a: On average, there is a statistically significant and positive market reaction to the corporate headquarters relocations.

Panel b. indicates that the stock market is not concerned with the division

relocations. We do not find any statistically significant CAAR within ten days around the event date. The realized CAARs are negative in general, suggesting that investors penalize division relocations. These results are not what we hypothesized in hypothesis 4b.

Panel c. reveals that there is short-lasting, but significantly large market reaction to the plant relocation announcements. The CAAR for (0, +1) is 2.06% and statistically significant at 5%. The CAAR (0, 2) is 2.18% and also statistically significant at 5%. We also find that the DAR (6) is statistically significant at 1%; it has a value of 1.27%. Investors evaluate plant relocation decisions positively. This result is not consistent with the hypothesis 4c, which states that stock prices fall statistically significantly when firms relocate their plants.

We also report the event study results of the relocation announcements that do not state the type of facility relocated. They are exhibited in Panel d. The results indicate that investors are indifferent to this type of relocation announcements, but there is a general negative perception towards them. Moreover, the DAR (6) is –1.78%, and statistically significant at 5%. These results are not consistent with hypothesis 4d.

The event study results based on the stated reason classification are given in Appendix 6 from Panel a. through Panel f. Panel a. indicates that, on average, the stock market evaluates business expansion-related relocations negatively. However, the firms in this sample undergo a positive valuation prior to the announcement. DAR (-10) is

1.03%, and statistically significant at 1%. This positive market response is also reflected on the long windows of (-10, -1), and (-10, +10). The CAAR for (-10, -1) is 1.88% and the CAAR for (-10, +10) is 2.76%. Both are statistically significant at 5%. We do not observe any significance associated with the CAARs in the other windows. It seems that, in the business expansion-related relocations, there is a leakage of information. These results are not consistent with the hypothesis 3a, which expresses that positive abnormal stock prices should be observed to the business expansion-related relocations.

Panel b. shows that investors tend to consider cost savings-related relocations positively. We detect that the stock market assesses such relocations positively. High significance levels associated with the CAARs continue until the (0, +6) window, implying a slow absorption of information. Specifically, the CAAR for the window (0, +1) is 0.66% and statistically significant at 1%. The CAAR for (0, +2) is 0.51% and statistically significant at 5%. The DAR (0) is 0.49% and statistically significant at 10%. The DAR (1) is 0.17% and significant at 10%. As mentioned, we observe these significant CAARs even in the (0, +6) window. These results are consistent with the cost benefit explanation of the relocation decision, which hypothesizes that the relocation is a wealth increasing activity if it belongs to the cost savings category.

The event study results of the capacity reduction-related relocations are exhibited in Panel c. Generally, there is a negative perception among investors towards such announcements. However, the realized CAARs, and DARs are not significant. These results are consistent with the hypothesis 3c. However, we do not find significant

abnormal returns associated with such relocations. We observe that the consolidation-related relocations are perceived positively by the market.

Panel d. shows that the CAAR for (0, +1) is positive, 0.80%, but not statistically significant. The CAAR for (0, +2) is 1.13% and statistically significant at 10%. Significant abnormal returns are realized through the event period. The DAR (-10) is –0.58%, and significant at 10%. The DAR (10) is 1.24%, and significant at 1%. The CAAR for (-10, -1) is a statistically significant –3.45%. The CAAR for (0, +10) is a statistically significant 4.44%. As opposite to the business expansion-related relocations, the firms in this sample experience a negative valuation by the market prior to the announcement. These results are not consistent with the hypothesis 3d, which expects a negative market response to such announcements. However, although these results are inconsistent with those of Chan et al. (1995), they are consistent with those of Ghosh et al. (1995). The latter study adds the relocations that contain consolidation of operations to the cost savings category. A positive and significant market response to the cost savings-related relocations is observed in that study. Overall, these results confirm that there is probably a leakage and a slow absorption of new information.

Panel e. exhibits the event study results of the other reasons-related relocations. We observe strong positive abnormal returns within the four days around the announcement date. The CAAR for (-2, 0) is 3.78% and statistically significant at 5%. The CAAR for (-1, 0) is 5.03% and statistically significant at 0.1%. We also find statistically significant and large abnormal returns in the (-4, -1) and (-3, -1) windows

(not reported), as well, of 5.48% and 4.33%, respectively. This large realization of abnormal returns leads us to conclude that there is a visible leakage of information prior to the announcement. The DAR (-10) is –1.79%, and statistically significant at 10%. This finding is verified by the observation that there is no significant abnormal returns in the post-event windows. Overall, these results are consistent with hypothesis 3e.

Finally, we report the event study results of the sample where no reason is stated for relocations in the announcements in Panel f. The results indicate that the abnormal returns are realized within the two days around the event date. The CAAR for (0, +1) is 3.45% and significant at 1%. Its sign test is also significant at 10%. The CAAR for (0, +2) is 3.77% and significant at 1%. Its corresponding sign test statistics is significant at 0.1%; 14 out of 15 firms experience positive abnormal returns. These results support hypothesis 3f.

6.3. Regression Results

The results of the regression models are reported in Appendix 7. Specifically, we report the coefficients, their t-values, adjusted R-squares and the number of observations for each model. The t-values associated with the regression coefficients are provided in parentheses. Panel a. exhibits the results for the type of facility and the management's stated reason for relocation. The results in both model 1 and 3 indicate that the difference in the type of facility relocated does not significantly explain the variation in the stock market response to relocation decisions. In model 1, the headquarters and division

coefficients are negative, meaning that the headquarters and division relocations are negatively related to investors' perceptions towards those firms. However, investors evaluate plant relocations positively. The coefficient for the headquarter relocation changes sign when the relocation reasons are added to the model. We find evidence that the stock market's response depends on management's stated reasons. Model 2 reveals that business expansions are generally perceived negatively by investors. Its coefficient has a value of -0.038 and significant at 5% level. Further, the reasons related to cost savings, capacity reduction, consolidation and other purposes are negatively evaluated. Contrary to expectations, the cost savings coefficient is –0.03 and significant at 10%. The capacity reduction coefficient is –0.04 and significant at 10%. The other reasons coefficient is –0.049 and significant at 5% as well. However, the explanatory power of the model is very low, the adjusted R^2 is 1.4%. Model 3 has similar results to those of Model 2, but the significance associated with the cost savings variable disappears. The explanatory power of the model decreases substantially, to 0.5%. These findings are generally consistent with other studies. However, we find negative business expansions and cost savings coefficients, unlike those of Chan et al (1995) and Ghosh et al. (1995). Further we could not find any significance in the type of facility dummies.

The results of the regressions based on geographic classification are reported in Panel b. Model 4 examines the probable regional effects at a local level while model 5 is concerned with the provincial effects. We do not find any significance attached to any of the regional dummy variables. The coefficients for Montreal, Quebec, Edmonton, and Ontario are positive, while those of other regions are negative. These findings suggest

that investors respond positively to the business relocations of the firms which move from Montreal, Quebec, Edmonton, and Ontario[42]. The results of the models using industry and time dummies are reported in Panel c. Again, there is no significance associated with any of the dummy variables. The service and resource firms experience negative market reaction while the manufacturing firms experience positive reaction. Model 7 and Model 8 show that the market's reaction to the referendum and the elections that PQ won is positive, as expected.

Overall, the regression results do not show significance and their explanatory powers are very limited[43]. Noting the limitations of these models, we conclude that investors are not concerned with any factor other than the stated reasons in such decisions.

7. Conclusions

This thesis investigates the association between stock price performance and business relocation decisions for 87 Canadian firms listed in the Toronto Stock Exchange during the period of 1975-1997. The major focus is on studying the political instability in Quebec. In addition, we analyze the effect of the information content of corporate relocation announcements on the market value of firms. Broadly, we attempt to establish a bridge between two separate fields of the finance literature, namely political risk and

[42] Using the same variables as appearing in Model 4 and Model 5, we construct two similar models. But this time, we classified the relocations according to where the firm has relocated to. For example, if a firm moved from Montreal to Toronto, then the Toronto dummy takes the value of 1 for this specific relocation, not Montreal. The results do not yield any significance.

capital investment decisions.

Studies using the U.S. data have found significant market reaction to business relocation announcements. Employing the standard event methodology, we find that there is a statistically significant positive market reaction to the announcements of business relocation decisions. The results of the event study tests for the entire sample indicate that the CAAR for the window (0, +1) is 0.62% and statistically significant at 1%. The CAAR for the window (0, +2) takes the value of 0.84% and is statistically significant at 0.1%, with 50 out of 84 firms having positive abnormal returns.

In some sub-samples, we observe a possible leakage of information regarding the relocation decision before it is officially announced. This early response might be explained as follows: First, we observe some rumors about the relocations prior to the official announcement. Eventually, the firm denies the rumor, but announces the relocation decision later on. However, the market responds to the rumor, and we observe an unexpected movement in the firm's stock returns. Second, we argued earlier that the political instability in Quebec is a long and a continuous problem, leading to many firms and individuals to leave the province over the last four decades. Thus, there might be a strong expectation among investors that the firms in Quebec will eventually quit the province. Consequently, the abnormal returns that we observe prior to the announcements might be a result of these expectations. In some samples, we find that there is an early and statistically significant response to the announcement, and this response continues through the announcement date. In an efficient market, one should not observe any

[43] When we use the CAAR for (0, +2) as the dependent variable, similar results are obtained.

significant abnormal return at or subsequent to the announcement date if the event was expected. Only our first narration explains this situation.

Further, in some sub-samples we observe that the market does not quickly absorb the new information conveyed by the relocation announcements. This implies that, with respect to this particular sample of securities, the TSE appears to be relatively not efficient in its semi-strong form. The statistically significant trend in the CAARs raises the possibility that some excess returns could have been earned by acting on the relocation announcements as it appeared in *The Financial Post.*

Breakdown of the entire sample into regional samples reveal that much of the significance associated with the abnormal returns in this sample comes from the Quebec sample. This breakdown also helps us measure the stock market's reaction to the political instability in Quebec. We examine the differences in the stock market's response to those relocation announcements among these groups. The results of the mean difference and median difference tests indicate that the stock market's reaction to Quebec and Montreal firms is positively and statistically significantly higher than those for the control samples. We attribute this positive difference to the existence of political instability. A possible explanation for this as follows; when a firm moves out of Quebec, it reduces the political instability component of its total operating risk substantially. Then, the theory of firm valuation tells us that its value increases due to a lower discount rate, or higher expected cash flows or both. In an efficient market, this change in the future prospects and value of a firm should be reflected in its stock price.

Further, we examine the effects of the information conveyed by the announcement on the observed abnormal returns. We discussed earlier that one should observe positive (negative) market response to the business relocation announcement if it perceives that the relocation decision will enhance (worsen) the future prospects of that firm. The event study results reveal that the relocation decisions that are motivated by business expansions and capacity reductions undergo negative abnormal returns, suggesting that investors are averse to those relocations. However, we do not observe any significance associated with these samples of announcements. Investors tend to consider cost savings, consolidation, and other reasons-related relocations significantly positively. There is a positive perception towards the announcements in which no reason is stated. Consistent with the literature, we find positively significant market response to the headquarters relocations. Investors consider negatively the announcements where the type of facility is not stated, or when it is a for a division-regional headquarters. However, the tests do not yield significant results. Interestingly, we detect a short-lasting, but statistically significantly and positively large market reaction to the plant relocation announcements. This is not consistent with the earlier findings using the U.S. data. Finally, we find that investors are indifferent to relocation announcements, but there is a general negative perception towards them.

These results are generally consistent with the existing studies from the U.S. However, Chan et al. (1995) find negatively significant results for the consolidation, other reasons-related, and the plant relocations.

Moreover, we construct regression models to explore the possible effects of some specific factors on the realized abnormal returns. On average, the regression results do not show significance and their explanatory powers are very limited. They indicate that the stock market's reaction to the relocation announcements is independent of the industry, region, type of facility relocated, and time. The firms relocating in order to expand their business activities, cost savings, capacity reduction, consolidation, and other reasons are likely to experience negative abnormal returns. This probably adds to the "unspoken" reasons of political instability in Quebec.

8. Future Research Topics

Having studied the political risk and the capital investment decisions, we came across to some interesting topics, which may be appealing to some researchers for further research. First of all, the relocation activities between the U.S. and Canada can be analyzed. The Canadian companies have been prone to move to the U.S. This study may shed some light on the losses/gains of the NAFTA agreement to each side.

Second, we benefited from business relocation decisions to quantify political instability in Quebec. It might be interesting to compare the performance portfolio of Quebec-based companies, or the Montreal Stock Exchange to other exchange markets in Canada, and associate the index performances with significant political events. A similar study is employed by Bittlingmayer (1998) for the German stock market.

Third, it might be productive to compare the costs of initial public offerings (IPO) for the Quebec and the non-Quebec firms.

Fourth, using first auto regressive moving average technique, the volatility shifts in Montreal stock exchange can be analyzed and then can be affiliated with the political events in Quebec to study the spillover of this political instability among other Canadian stock exchanges.

Fifth, the capital flow of investments, or alternatively the FDI, can be analyzed at provincial levels to search for possible differences among them.

Finally, the market's reaction to the first referendum for separation in 1980 is more likely to be more severe than that for the second referendum in 1995. Whether the market reacted differently before 1980 relative to before 1995 appears to be a potential research avenue.

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Appendix 1. The Chronology of the Separatism in Quebec

Source: http://www.premier.gouv.qc.ca/projet/historia.htm

A. The Quiet Revolution (1960-1967)

1960 June: Victory of provincial Liberal party -- then nationalistic -- in Québec. Slogan: "It's time for a change." Jean Lesage, plunges into a policy of emancipation, under the name of the 'quiet revolution.'

1962 Nov: Québec returns Liberals to power, slogan: 'Masters in our own home.'

1963 March: First bombs by the Québec Liberation Front (FLQ)

1964 Feb: First international agreement signed in Paris by Québec, in the area of education; Oct: visit by the Queen. Police intervene and club separatist demonstrators.

1966 reformed Union nationale wins elections in Québec. Daniel Johnson, nationalist, becomes Premier, slogan 'Equality or Independence.'

1967 May: Invited for the Montréal Expo, French President Charles de Gaulle ends a speech with his notorious "Vive le Québec libre!" He cancels his visit to Ottawa, following a protest from the Canadian government; Oct: René Lévesque leaves the Liberal party and founds the sovereignty-Association Movement

B. Rise of the Parti Québécois

1968 creation of franco-Québec office for youth June: Prime Minister P.E. Trudeau faces rioting crowd on Saint-Jean Baptiste Day; Oct.: Creation of the PQ, which absorbs the small independentist movements;
Nov: formation of Ministry of Immigration

1969 July: Increasing number of riots and bombs as politicians adopt an increasing number of anti-democratic measures vis-à-vis francophones; Oct. - Dec.: James Cross, head of the British Trade Commission in Montréal, and subsequently Pierre Laporte, Québec Minister of Labour and Manpower, kidnapped by the FLQ; Oct. 17. Trudeau invokes War Measures Act, imprisoning all those opposing federalist ideas. Pierre Laporte is found, assassinated. Cross is freed Dec. 3.

1973 Oct: Bourassa increases his majority as the Union nationale collapses. The PQ, with 6 seats, becomes the official opposition

1976 Nov 15: PQ wins election and forms Québec's government

1980 Québec referendum announced, and lost -- only 40% vote oui.

C. Timeline since the First PQ Victory

November 15, 1976
Parti Québécois led by René Lévesque wins Québec provincial election, promises to hold a referendum on sovereignty-association.

August 26, 1977
Bill 101 becomes Québec law. It restricts attendance at English-language schools and bans the use of any language other than French on commercial signs.

May 22, 1979
Liberal Party led by Pierre Trudeau wins federal election.

May 20, 1980
Québec referendum, federalists win with 59.56% of vote. René Lévesque adopts constitutional strategy known as the beau risque based on the idea that a political reconciliation with the rest of Canada is possible.

April 13, 1981
Parti Québécois led by René Lévesque is re-elected in Québec provincial election.

November 5, 1981
The federal government and nine of ten provincial premiers agree to a new constitution. Québec does not approve the deal.

April 17, 1982
Constitution Act is proclaimed in Ottawa.

September 4, 1984
Progressive Conservative Party led by Brian Mulroney wins federal election.

January 20, 1985
At a Parti Québécois policy convention in Montréal, a majority of delegates vote not to fight the next provincial election on the issue of sovereignty. Dissident PQ hardliners walk out of the meeting in protest.

June 20, 1985
René Lévesque announces his resignation as Québec premier and leader of the Parti Québécois. He is succeeded by Pierre-Marc Johnson.

December 2, 1985
Liberal Party led by Robert Bourassa wins Québec provincial election.

June 3, 1987
Meech Lake Accord is finalized by the federal government and ten provincial premiers.

March 19, 1988
Jacques Parizeau becomes Parti Québécois leader.

December 18, 1988
Québec government introduces Bill 178 after the Supreme Court of Canada rules that a section of the province's language law is unconstitutional. Québec invokes the notwithstanding clause to override the Supreme Court.

November 21, 1988
Progressive Conservative Party led by Brian Mulroney is re-elected in federal election.

September 25, 1989
Liberal Party led by Robert Bourassa is re-elected in Québec provincial election.

May 21, 1990
Lucien Bouchard resigns from the federal cabinet and the Progressive Conservative party.

June 22, 1990
Meech Lake Accord on constitutional reform fails to gain the necessary approvals in both the Manitoba and Newfoundland provincial legislatures.

July - September 1990
Oka-Khanawake crisis in Québec, one Sûreté du Québec (provincial police) officer is killed. Road and bridge barricades come down after 78 days.

July 25, 1990
Bloc Québécois is formed by a group of six Québec MPs who elect Lucien Bouchard as their leader.

August 13, 1990
In federal by-election, Gilles Duceppe becomes the first MP to be elected as a member of the Bloc-Québécois.

January 29, 1991
Québec Liberal Party adopts the Allaire Report recommending greater autonomy for the province.

March 27, 1991
Québec's Bélanger-Campeau Commission condemns the constitutional status quo as 'unacceptable'.

August 22, 1992
Ottawa, the provinces and Native representatives agree to a package of constitutional reforms known as the Charlottetown Accord.

October 26, 1992
The Charlottetown Accord is rejected in a federal referendum. More than 54% vote against the deal. Only New Brunswick, Prince Edward Island, Ontario and the Northwest Territories approve it.

October 25, 1993
Liberal Party led by Jean Chrétien wins federal election, Bloc Québécois becomes the Official Opposition.

September 18, 1994
Parti Québécois led by Jacques Parizeau wins Québec provincial election, promises to hold a referendum on sovereignty.

June 12, 1995
Jacques Parizeau, Lucien Bouchard and Action Démocratique leader Mario Dumont agree "to propose to Canada a treaty on a new economic and political partnership... "

October 24, 1995
In their own referendum, Cree Indians in northern Québec vote 96% in favour of staying in Canada if Quebeckers vote yes on October 30th.

October 26, 1995
In separate referendum, Inuit living in northern Québec vote 95% in favour of staying in Canada.

October 30, 1995
Québec referendum, federalists win with 50.58% if vote. Jacques Parizeau blames the sovereignist defeat on "money and the ethnic vote" and declares that "we will have our country and we will get our revenge".

October 31, 1996
Jacques Parizeau announces his resignation as Québec premier and PQ leader.

January 29, 1996
Lucien Bouchard is officially sworn in as premier of Québec.

December 1998
Lucien Bouchard is elected as premier of Québec.

Appendix 2. The Distribution of the Montreal and Quebec Samples Over Time

Panel a. For the Entire Sample of 231 Firms

Montreal			Quebec	
Year	**Relocated to:**	**No of Relocations**	**Relocated to:**	**No of Relocations**
1970	Ontario	1	Ontario	1
1971			Unknown	1
1972			Toronto	1
1973				
1974	Toronto	1	Toronto	1
1975				
1976				
1977	Ontario(2), Toronto	3	Ontario(4), Toronto	5
1978	Toronto(5), Ontario(2)	7	Toronto(5), Ontario(2)	7
1979	Toronto(2)	2	Toronto(2)	2
1980				
1981	Calgary, Vancouver	2	Calgary, Vancouver	2
1982	Halifax	1	Halifax	1
1983	Toronto(2)	2	Toronto(2)	2
1984	Toronto	1	Toronto, Ontario	2
1985				
1986	Toronto	1	Toronto	1
1987				
1988			Toronto	1
1989	Toronto, Unknown	2	Toronto, Unknown	2
1990	Ontario	1	Ontario	1
1991	Ontario	1	Ontario	1
1992				
1993	Toronto	1	Toronto	1
1994	Toronto(3)	3	Toronto(3), Ontario	4
1995	Toronto(2), Calgary, Unknown	4	Toronto(2), Calgary, Unknown	4
1996	Calgary(2), Toronto, Ontario	4	Calgary(2), Toronto, Ontario(2)	5
1997	Toronto(4)	4	Toronto(4), Nova Scotia	5
Total		**41**		**50**

Panel b. For the Final Sample of 87 Firms

Montreal			Quebec	
Year	**Relocated to:**	**No of Relocations**	**Relocated to:**	**No of Relocations**
1975				
1976				
1977	Toronto, Ontario	2	Toronto, Ontario(2)	3
1978	Ontario, Toronto(2)	3	Ontario, Toronto(2)	3
1979	Toronto	1	Toronto	1
1980				
1981	Calgary, Vancouver	2	Calgary, Vancouver	2
1982				
1983	Toronto	1	Toronto	1
1984	Toronto	1	Toronto(2)	2
1985				
1986				
1987				
1988				
1989				
1990				
1991	Ontario	1	Ontario	1
1992				
1993				
1994	Toronto	1	Toronto	1
1995	Toronto, Calgary	2	Toronto, Calgary	2
1996	Calgary	1	Calgary	1
1997	Toronto(3)	3	Toronto(3)	3
Total		**18**		**20**

Appendix 3. The Daily Abnormal Returns Based on the Geographic Classification

Table 1. The Daily Abnormal Returns for the Quebec and Non-Quebec Samples

Panel a. For the Quebec Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	0.42%	0.67%	2.02*	20	16:4	2.79>>
-9	0.07%	0.37%	0.53	20	13:7	1.45
-8	0.17%	0.13%	0.65	20	10:10	0.10
-7	0.32%	0.10%	0.37	20	11:9	0.55
-6	0.50%	0.03%	0.84	20	10:10	0.10
-5	0.33%	0.59%	0.92	20	14:6	1.89)
-4	0.11%	0.08%	0.19	20	11:9	0.55
-3	0.57%	0.54%	1.52	20	13:7	1.45
-2	0.81%	0.48%	2.62**	20	16:4	2.79>>
-1	-0.22%	0.04%	-0.96	20	10:10	0.10
0	0.08%	0.34%	0.63	20	12:8	1.00
+1	0.69%	0.78%	1.84$	20	13:7	1.45
+2	0.71%	0.23%	1.76$	20	14:6	1.89)
+3	-0.17%	-0.27%	-0.39	20	8:12	-0.79
+4	0.30%	-0.11%	1.03	20	9:11	-0.34
+5	-0.46%	-0.19%	-1.29	20	9:11	-0.34
+6	0.78%	0.22%	1.28	20	12:8	1.00
+7	-0.04%	-0.15%	0.05	20	10:10	0.10
+8	-0.37%	-0.42%	-1.18	20	8:12	-0.79
+9	0.44%	0.42%	1.52	20	12:8	1.00
+10	0.06%	0.18%	0.19	20	12:8	1.00

Panel b. For the Non-Quebec Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	-0.05%	-0.16%	0.13	60	26:34	-0.65
-9	-0.31%	-0.12%	-0.33	61	30:31	0.26
-8	-0.08%	-0.16%	-0.86	58	25:33	-0.67
-7	-0.29%	-0.12%	-0.59	57	27:30	-0.02
-6	-0.21%	-0.51%	-1.70$	58	22:36	-1.46
-5	-0.08%	0.23%	0.70	60	37:23	2.20>
-4	0.43%	0.16%	1.47	59	33:26	1.30
-3	0.71%	0.37%	2.22*	58	36:22	2.22>
-2	-0.47%	-0.47%	-2.34*	59	25:34	-0.79
-1	-0.17%	-0.21%	-0.45	58	27:31	-0.14
0	0.59%	0.16%	1.92$	58	33:25	1.43
+1	0.00%	-0.13%	1.28	64	30:34	-0.10
+2	0.07%	0.09%	1.25	63	32:31	0.52
+3	-0.02%	-0.02%	-0.79	61	30:31	0.26
+4	-0.21%	-0.05%	-0.09	61	29:32	0.01
+5	0.09%	-0.27%	-0.57	62	25:37	-1.13
+6	0.39%	0.09%	1.65$	63	33:30	0.78
+7	-0.29%	-0.03%	0.17	63	30:33	0.02
+8	-0.18%	0.06%	-0.16	59	31:28	0.78
+9	-0.02%	-0.18%	0.74	59	27:32	-0.27
+10	0.29%	0.17%	1.55	62	32:30	0.65

$, (,) significant at .10 *, <, > significant at .05

, <<, >> significant at .01 *, <<<, >>> significant at .001

Table 2. The Daily Abnormal Returns for the Montreal and Toronto Samples

Panel a: For the Montreal Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	0.33%	0.50%	1.65$	18	14:4	2.45>
-9	0.06%	0.44%	0.45	18	11:7	1.04
-8	0.04%	-0.22%	0.12	18	8:10	-0.38
-7	0.32%	0.10%	0.18	18	10:8	0.57
-6	0.62%	0.15%	1.13	18	10:8	0.57
-5	0.32%	0.59%	0.90	18	13:5	1.98>
-4	0.11%	-0.11%	0.16	18	9:9	0.10
-3	0.67%	0.54%	1.64	18	12:6	1.51
-2	0.73%	0.48%	2.10*	18	15:3	2.92>>
-1	-0.30%	-0.20%	-1.17	18	8:10	-0.38
0	0.12%	0.34%	0.86	18	11:7	1.04
+1	0.87%	1.02%	2.31*	18	13:5	1.98>
+2	0.69%	0.23%	1.44	18	13:5	1.98>
+3	-0.11%	-0.19%	-0.19	18	8:10	-0.38
+4	0.30%	-0.11%	0.85	18	8:10	-0.38
+5	-0.36%	0.00%	-0.74	18	9:9	0.10
+6	0.86%	0.43%	1.33	18	11:7	1.04
+7	0.08%	-0.15%	0.28	18	9:9	0.10
+8	-0.36%	-0.42%	-1.12	18	7:11	-0.85
+9	0.38%	0.42%	1.13	18	11:7	1.04
+10	0.06%	0.18%	0.12	18	11:7	1.04

Panel b. For the Toronto Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	-0.53%	-0.94%	-1.10	17	6:11	-0.92
-9	-1.59%	-0.87%	-2.57*	16	4:12	-1.72(
-8	-0.14%	0.03%	-0.36	16	8:8	0.29
-7	-0.10%	0.22%	0.11	16	11:5	1.79)
-6	0.40%	-0.12%	-0.51	17	8:9	0.05
-5	-0.14%	0.26%	0.60	18	11:7	1.25
-4	-0.15%	-0.09%	-0.44	16	7:9	-0.21
-3	-0.79%	-0.92%	-1.77$	14	4:10	-1.34
-2	-0.53%	-0.89%	-1.42	15	6:9	-0.50
-1	0.44%	-0.39%	0.23	15	7:8	0.02
0	1.09%	1.27%	2.23*	15	11:4	2.09>
+1	-1.09%	-0.35%	0.53	18	7:11	-0.64
+2	-0.93%	0.20%	0.45	18	11:7	1.25
+3	1.17%	1.32%	1.73$	17	11:6	1.51
+4	-0.13%	-0.53%	-0.46	17	7:10	-0.43
+5	-0.61%	-0.37%	-1.06	17	6:11	-0.92
+6	0.70%	-0.15%	2.16*	17	8:9	0.05
+7	-0.09%	0.20%	-0.01	17	9:8	0.54
+8	0.38%	0.22%	1.49	15	9:6	1.05
+9	-0.09%	-0.18%	0.01	15	6:9	-0.50
+10	0.64%	1.08%	1.48	17	11:6	1.51

$, (,) significant at .10 *, <, > significant at .05
, <<, >> significant at .01 *, <<<, >>> significant at .001

Table 3. The Daily Abnormal Returns for the Non-Toronto and the Non-Toronto/non-Quebec Samples

Panel a. For the Non-Toronto Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	0.23%	0.18%	1.84$	63	36:27	1.42
-9	0.12%	0.20%	1.25	65	39:26	1.90)
-8	0.02%	-0.15%	-0.29	62	27:35	-0.74
-7	-0.14%	-0.30%	-0.42	61	27:34	-0.62
-6	-0.15%	-0.48%	-0.91	61	24:37	-1.39
-5	0.07%	0.33%	0.89	62	40:22	2.57>
-4	0.48%	0.20%	1.75$	63	37:26	1.67)
-3	1.00%	0.74%	3.79***	64	45:19	3.54>>>
-2	-0.06%	0.12%	-0.09	64	35:29	1.04
-1	-0.33%	-0.04%	-1.09	63	30:33	-0.09
0	0.31%	0.09%	1.10	63	34:29	0.91
+1	0.51%	0.20%	2.00*	66	36:30	1.03
+2	0.54%	0.09%	1.97*	65	35:30	0.91
+3	-0.38%	-0.26%	-1.89$	64	27:37	-0.97
+4	-0.07%	-0.02%	0.72	64	31:33	0.04
+5	0.11%	-0.21%	-0.73	65	28:37	-0.83
+6	0.43%	0.12%	1.22	66	37:29	1.28
+7	-0.27%	-0.14%	0.20	66	31:35	-0.20
+8	-0.37%	-0.14%	-1.54	64	30:34	-0.21
+9	0.14%	0.01%	1.55	64	33:31	0.54
+10	0.13%	0.01%	0.86	65	33:32	0.41

Panel b. For the Non-Toronto/non-Quebec Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	0.14%	-0.08%	0.85	43	20:23	-0.19
-9	0.15%	0.19%	1.14	45	26:19	1.32
-8	-0.05%	-0.23%	-0.79	42	17:25	-0.97
-7	-0.36%	-0.35%	-0.77	41	16:25	-1.14
-6	-0.46%	-0.65%	-1.69$	41	14:27	-1.77(
-5	-0.05%	0.22%	0.45	42	26:16	1.81)
-4	0.65%	0.22%	1.99*	43	26:17	1.64
-3	1.19%	0.74%	3.55***	44	32:12	3.29>>
-2	-0.45%	-0.46%	-1.87$	44	19:25	-0.63
-1	-0.38%	-0.13%	-0.66	43	20:23	-0.19
0	0.42%	0.07%	0.91	43	22:21	0.42
+1	0.43%	-0.01%	1.18	46	23:23	0.28
+2	0.47%	-0.23%	1.19	45	21:24	-0.17
+3	-0.48%	-0.26%	-2.01*	44	19:25	-0.63
+4	-0.24%	-0.01%	0.18	44	22:22	0.27
+5	0.36%	-0.21%	-0.02	45	19:26	-0.77
+6	0.28%	0.11%	0.61	46	25:21	0.87
+7	-0.36%	-0.14%	0.21	46	21:25	-0.31
+8	-0.37%	0.00%	-1.06	44	22:22	0.27
+9	0.00%	-0.11%	0.85	44	21:23	-0.03
+10	0.16%	-0.12%	0.91	45	21:24	-0.17

$, (,) significant at .10 *, <, > significant at .05
, <<, >> significant at .01 *, <<<, >>> significant at .001

Appendix 4. The Event-Study Results for the Entire Sample of 87 Firms

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	0.07%	0.02%	1.13	80	42:38	0.84
-9	-0.22%	0.03%	-0.03	81	43:38	0.95
-8	-0.01%	-0.10%	-0.42	78	35:43	-0.52
-7	-0.13%	-0.11%	-0.32	77	38:39	0.27
-6	-0.03%	-0.28%	-1.04	78	32:46	-1.20
-5	0.02%	0.31%	1.07	80	51:29	2.86>>
-4	0.35%	0.13%	1.36	79	44:35	1.40
-3	0.68%	0.37%	2.69**	78	49:29	2.65>>
-2	-0.15%	0.07%	-0.70	79	41:38	0.73
-1	-0.18%	-0.08%	-0.88	78	37:41	-0.07
0	0.46%	0.17%	1.97*	78	45:33	1.75)
+1	0.17%	0.08%	2.01*	84	43:41	0.62
+2	0.22%	0.15%	1.95$	83	46:37	1.39
+3	-0.06%	-0.07%	-0.88	81	38:43	-0.16
+4	-0.08%	-0.05%	0.43	81	38:43	-0.16
+5	-0.04%	-0.26%	-1.13	82	34:48	-1.15
+6	0.48%	0.10%	2.06*	83	45:38	1.17
+7	-0.23%	-0.03%	0.18	83	40:43	0.07
+8	-0.23%	-0.01%	-0.73	79	39:40	0.28
+9	0.09%	-0.03%	1.40	79	39:40	0.28
+10	0.24%	0.17%	1.44	82	44:38	1.06

Days	Cumulative Average Abnormal Return: Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	1.42%	2.04%	0.11%	2.55*	46:38	1.28
(-10,-1)	0.40%	0.50%	0.50%	0.91	47:34	1.84)
(0,+10)	1.02%	1.53%	0.71%	2.63**	45:39	1.06
(-5,+5)	1.38%	1.40%	1.03%	2.38*	52:32	2.59>>
(-5,-1)	0.72%	0.62%	0.42%	1.58	49:31	2.41>
(0,+5)	0.66%	0.77%	0.59%	1.78$	47:37	1.49
(-2,0)	0.13%	0.06%	-0.35%	0.22	35:44	-0.62
(-1,0)	0.27%	0.19%	-0.05%	0.77	36:42	-0.29
(0,+1)	0.62%	0.71%	0.26%	2.82**	46:38	1.28
(0,+2)	0.84%	1.06%	0.48%	3.43***	50:34	2.15>
(-1,+1)	0.44%	0.55%	0.08%	1.82$	43:41	0.62
(-2,+2)	0.51%	0.78%	0.10%	1.98*	45:39	1.06
(-3,+3)	1.13%	1.10%	0.50%	2.34*	46:38	1.28
(-4,+4)	1.40%	1.42%	0.90%	2.66**	48:36	1.71)

$, (,) significant at .10 *, <, > significant at .05

, <<, >> significant at .01 *, <<<, >>> significant at .001

Appendix 5. The Event-Study Results based on the Type of Facility Relocated

Panel a. The Corporate Headquarters Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	0.13%	0.28%	1.16	26	14:12	0.73
-9	-0.16%	0.23%	0.43	26	15:11	1.12
-8	0.26%	0.33%	0.58	26	14:12	0.73
-7	0.34%	0.18%	0.52	26	16:10	1.51
-6	0.19%	-0.24%	0.69	26	11:15	-0.45
-5	-0.44%	0.01%	-0.26	27	14:13	0.54
-4	0.40%	0.22%	0.99	27	18:9	2.08>
-3	0.55%	0.37%	1.23	27	16:11	1.31
-2	-0.08%	0.03%	0.01	27	14:13	0.54
-1	0.67%	0.37%	1.59	26	16:10	1.51
0	0.59%	0.34%	1.80$	26	14:12	0.73
+1	-0.60%	0.34%	0.80	28	17:11	1.48
+2	0.90%	0.33%	2.24*	27	17:10	1.69)
+3	0.09%	0.16%	0.66	26	15:11	1.12
+4	-0.22%	-0.17%	-0.14	26	11:15	-0.45
+5	0.68%	-0.26%	0.24	27	13:14	0.15
+6	0.20%	0.14%	0.96	27	16:11	1.31
+7	0.35%	-0.03%	0.72	27	12:15	-0.24
+8	-0.51%	0.22%	-0.53	27	17:10	1.69)
+9	-0.16%	-0.18%	0.55	27	12:15	-0.24
+10	0.15%	0.48%	1.32	26	16:10	1.51

Days	Cumulative Average Abnormal Return: Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	3.34%	4.89%	3.47%	3.39***	17:11	1.48
(-10,0)	2.46%	2.74%	1.50%	2.63**	18:9	2.08>
(-10,-1)	1.87%	2.17%	1.46%	2.19*	18:9	2.08>
(0,+10)	1.47%	2.72%	2.48%	2.60**	18:10	1.86)
(-5,+5)	2.54%	2.90%	2.33%	2.76**	20:8	2.62>>
(-5,-1)	1.10%	1.12%	0.88%	1.59	19:8	2.46>
(0,+5)	1.43%	1.77%	1.34%	2.29*	17:11	1.48
(-2,0)	1.18%	1.07%	0.01%	1.95$	14:13	0.54
(-1,0)	1.26%	1.07%	0.19%	2.40*	14:12	0.73
(0,+1)	-0.01%	0.82%	0.34%	1.82$	15:13	0.73
(0,+2)	0.88%	1.53%	1.00%	2.78**	17:11	1.48
(-1,+1)	0.65%	1.32%	0.58%	2.40*	17:11	1.48
(-2,+2)	1.47%	2.04%	1.23%	2.86**	19:9	2.24>
(-3,+3)	2.12%	2.63%	2.49%	3.14**	18:10	1.86)
(-4,+4)	2.30%	2.90%	2.38%	3.06**	17:11	1.48

Panel b. The Division Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	0.02%	0.02%	0.49	28	16:12	0.97
-9	-0.35%	0.20%	-0.13	28	15:13	0.60
-8	-0.51%	-0.45%	-1.55	27	7:20	-2.29<
-7	-0.28%	-0.58%	-0.57	27	9:18	-1.52
-6	0.20%	-0.11%	-0.90	26	12:14	-0.18
-5	0.52%	0.41%	1.58	26	19:7	2.56>
-4	0.18%	-0.04%	0.35	27	13:14	0.02
-3	0.87%	0.70%	2.87**	27	20:7	2.72>>
-2	-0.03%	0.13%	-0.07	27	16:11	1.18
-1	-0.43%	-0.46%	-1.34	27	11:16	-0.75
0	-0.16%	-0.15%	-0.03	27	13:14	0.02
+1	0.17%	0.14%	0.72	27	15:12	0.79
+2	-0.03%	0.15%	0.81	28	16:12	0.97
+3	-0.55%	-0.54%	-2.54*	28	10:18	-1.30
+4	0.15%	-0.06%	0.49	28	13:15	-0.16
+5	-0.60%	-0.35%	-1.69$	28	9:19	-1.67(
+6	0.51%	0.08%	0.81	28	15:13	0.60
+7	0.02%	0.12%	-0.21	27	17:10	1.56
+8	-0.32%	-0.50%	-1.05	27	9:18	-1.52
+9	0.80%	0.57%	2.68**	27	18:9	1.95)
+10	0.09%	-0.02%	0.20	27	12:15	-0.36

Days	Cumulative Average Abnormal Return Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	0.28%	0.25%	-0.26%	0.19	14:14	0.22
(-10,0)	0.03%	0.19%	0.35%	0.21	15:13	0.60
(-10,-1)	0.19%	0.20%	0.24%	0.23	15:13	0.60
(0,+10)	0.08%	0.04%	-1.25%	0.04	12:16	-0.54
(-5,+5)	0.09%	0.32%	0.60%	0.32	15:13	0.60
(-5,-1)	1.11%	0.95%	0.65%	1.51	17:10	1.56
(0,+5)	-1.02%	-0.63%	-1.09%	-0.93	12:16	-0.54
(-2,0)	-0.61%	-0.40%	-0.45%	-0.83	10:17	-1.14
(-1,0)	-0.58%	-0.38%	-0.57%	-0.97	10:17	-1.14
(0,+1)	0.01%	0.19%	0.08%	0.49	14:13	0.41
(0,+2)	-0.01%	0.42%	0.25%	0.87	15:13	0.60
(-1,+1)	-0.41%	-0.18%	-0.16%	-0.37	12:15	-0.36
(-2,+2)	-0.47%	0.02%	-0.48%	0.05	12:16	-0.54
(-3,+3)	-0.15%	0.11%	-0.29%	0.15	13:15	-0.16
(-4,+4)	0.17%	0.35%	0.27%	0.41	15:13	0.60

Panel c. The Plant Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	0.12%	-0.14%	0.73	21	10:11	-0.05
-9	-0.40%	-0.06%	-0.92	22	11:11	0.17
-8	0.11%	0.16%	-0.22	20	11:9	0.61
-7	-0.32%	0.13%	0.09	19	10:9	0.39
-6	-0.39%	-0.54%	-1.35	21	8:13	-0.93
-5	-0.08%	0.26%	0.32	22	14:8	1.45
-4	0.71%	0.17%	1.37	20	11:9	0.61
-3	0.73%	0.10%	0.64	19	10:9	0.39
-2	-0.41%	-0.61%	-1.30	20	8:12	-0.73
-1	-0.54%	-0.10%	-1.14	20	10:10	0.16
0	1.22%	0.44%	1.59	20	14:6	1.95)
+1	0.84%	-0.36%	1.35	24	8:16	-1.46
+2	0.13%	-0.23%	0.72	23	10:13	-0.45
+3	-0.04%	-0.06%	-0.38	22	9:13	-0.68
+4	-0.07%	0.50%	0.72	22	13:9	1.02
+5	0.04%	-0.16%	0.05	22	10:12	-0.26
+6	1.27%	0.35%	2.91**	23	14:9	1.22
+7	-1.22%	-0.40%	-0.35	24	8:16	-1.46
+8	0.22%	0.12%	0.43	20	10:10	0.16
+9	-0.37%	-0.39%	-0.73	20	8:12	-0.73
+10	0.40%	0.27%	0.59	24	13:11	0.59

Days	Cumulative Average Abnormal Return Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	1.95%	1.81%	-0.71%	1.16	13:11	0.59
(-10,0)	0.75%	-0.09%	1.39%	-0.08	13:9	1.02
(-10,-1)	-0.46%	-0.69%	-1.25%	-0.58	12:10	0.60
(0,+10)	2.42%	2.50%	-0.38%	2.10*	12:12	0.18
(-5,+5)	2.54%	1.41%	0.53%	1.21	14:10	0.99
(-5,-1)	0.41%	-0.10%	-0.26%	-0.05	11:11	0.17
(0,+5)	2.12%	1.51%	1.47%	1.64	15:9	1.40
(-2,0)	0.27%	-0.33%	-0.98%	-0.50	8:12	-0.73
(-1,0)	0.68%	0.16%	-0.05%	0.31	9:11	-0.29
(0,+1)	2.06%	1.11%	0.62%	2.07*	14:10	0.99
(0,+2)	2.18%	1.37%	0.37%	2.09*	15:9	1.40
(-1,+1)	1.52%	0.66%	-0.51%	1.07	11:13	-0.23
(-2,+2)	1.24%	0.42%	-0.80%	0.60	11:13	-0.23
(-3,+3)	1.93%	0.52%	-0.61%	0.59	12:12	0.18
(-4,+4)	2.58%	1.28%	0.20%	1.22	13:11	0.59

Panel d. The Unspecified Type of Facility Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	-0.25%	-1.08%	-0.80	5	2:3	-0.50
-9	1.08%	-0.73%	1.18	5	2:3	-0.50
-8	0.74%	1.00%	1.07	5	3:2	0.40
-7	-1.04%	0.25%	-1.30	5	3:2	0.40
-6	-0.77%	-1.05%	-0.84	5	1:4	-1.39
-5	0.38%	0.30%	0.60	5	4:1	1.29
-4	-0.47%	-0.66%	-0.43	5	2:3	-0.50
-3	0.06%	0.34%	-0.17	5	3:2	0.40
-2	-0.10%	0.09%	-0.03	5	3:2	0.40
-1	-1.86%	-0.82%	-1.68$	5	0:5	-2.28<
0	0.08%	0.45%	0.57	5	4:1	1.29
+1	1.21%	1.76%	1.74$	5	3:2	0.40
+2	-1.61%	1.82%	-0.71	5	3:2	0.40
+3	1.85%	1.32%	1.76$	5	4:1	1.29
+4	-0.72%	-1.09%	-0.62	5	1:4	-1.39
+5	-1.14%	-1.93%	-1.25	5	2:3	-0.50
+6	-1.78%	-0.51%	-2.00*	5	0:5	-2.28<
+7	0.06%	0.14%	0.30	5	3:2	0.40
+8	-0.07%	0.08%	-0.10	5	3:2	0.40
+9	-0.51%	-0.69%	-0.48	5	1:4	-1.39
+10	0.70%	0.15%	1.03	5	3:2	0.40

Days	Cumulative Average Abnormal Return Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	-4.16%	-1.73%	-4.09%	-0.47	2:3	-0.50
(-10,0)	-2.15%	-1.49%	-2.94%	-0.56	2:3	-0.50
(-10,-1)	-2.23%	-1.95%	-4.25%	-0.76	2:3	-0.50
(0,+10)	-1.92%	0.21%	2.79%	0.07	3:2	0.40
(-5,+5)	-2.31%	-0.19%	1.42%	-0.07	3:2	0.40
(-5,-1)	-1.98%	-1.39%	-2.52%	-0.77	2:3	-0.50
(0,+5)	-0.32%	1.20%	4.97%	0.61	3:2	0.40
(-2,0)	-1.88%	-0.92%	0.54%	-0.66	3:2	0.40
(-1,0)	-1.78%	-0.89%	0.32%	-0.79	3:2	0.40
(0,+1)	1.29%	1.85%	1.82%	1.63	3:2	0.40
(0,+2)	-0.31%	1.28%	1.48%	0.93	3:2	0.40
(-1,+1)	-0.57%	0.49%	1.49%	0.36	3:2	0.40
(-2,+2)	-2.27%	-0.09%	1.57%	-0.05	3:2	0.40
(-3,+3)	-0.35%	1.20%	3.45%	0.56	3:2	0.40
(-4,+4)	-1.54%	0.34%	2.05%	0.14	3:2	0.40

$, (,) significant at .10 *, <, > significant at .05

, <<, >> significant at .01 *, <<<, >>> significant at .001

Appendix 6. The Event-Study Results based on the Motives for Relocation

Panel a. For the Business Expansions Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	1.03%	0.75%	3.07**	20	15:5	2.43>
-9	0.29%	0.39%	0.68	20	14:6	1.98>
-8	0.00%	-0.13%	0.10	20	9:11	-0.25
-7	-0.08%	0.18%	-0.22	20	11:9	0.64
-6	0.16%	-0.18%	0.67	19	9:10	-0.04
-5	0.24%	0.19%	0.69	19	13:6	1.80)
-4	0.20%	0.08%	0.65	20	11:9	0.64
-3	0.33%	0.60%	1.19	20	13:7	1.54
-2	0.04%	0.01%	0.32	20	10:10	0.19
-1	-0.32%	0.11%	-0.13	19	13:6	1.80)
0	-0.20%	-0.15%	-0.90	19	9:10	-0.04
+1	-0.17%	-0.44%	-0.44	20	8:12	-0.70
+2	0.10%	0.14%	0.72	20	11:9	0.64
+3	0.15%	-0.22%	-0.39	20	9:11	-0.25
+4	0.00%	0.03%	-0.20	20	10:10	0.19
+5	0.93%	0.42%	1.36	20	13:7	1.54
+6	0.25%	-0.03%	0.75	20	10:10	0.19
+7	-0.13%	-0.17%	0.72	20	9:11	-0.25
+8	-0.05%	0.25%	0.00	20	14:6	1.98>
+9	-0.04%	-0.05%	0.28	20	10:10	0.19
+10	0.05%	0.41%	0.70	20	12:8	1.09

Days	Cumulative Average Abnormal Return: Equally Weighted	Cumulative Average Abnormal Return: Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	2.76%	3.09%	0.12%	2.11*	13:7	1.54
(-10,0)	1.68%	1.97%	1.39%	1.86$	14:6	1.98>
(-10,-1)	1.88%	2.25%	1.22%	2.23*	14:6	1.98>
(0,+10)	0.87%	0.83%	-0.36%	0.79	10:10	0.19
(-5,+5)	1.29%	0.93%	1.13%	0.88	13:7	1.54
(-5,-1)	0.48%	0.87%	0.75%	1.22	13:7	1.54
(0,+5)	0.80%	0.05%	-1.19%	0.07	9:11	-0.25
(-2,0)	-0.48%	-0.22%	0.06%	-0.40	10:10	0.19
(-1,0)	-0.52%	-0.32%	-0.12%	-0.72	8:11	-0.50
(0,+1)	-0.36%	-0.42%	-0.26%	-0.94	8:12	-0.70
(0,+2)	-0.26%	-0.19%	-0.60%	-0.35	8:12	-0.70
(-1,+1)	-0.68%	-0.47%	-0.74%	-0.84	7:13	-1.15
(-2,+2)	-0.55%	-0.13%	-0.32%	-0.18	8:12	-0.70
(-3,+3)	-0.07%	0.12%	-0.27%	0.15	9:11	-0.25
(-4,+4)	0.12%	0.27%	0.08%	0.29	10:10	0.19

Panel b. For the Cost Savings Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	-0.05%	0.23%	1.17	18	11:7	1.26
-9	-0.61%	-0.48%	-0.48	18	7:11	-0.63
-8	0.28%	-0.03%	0.66	17	8:9	0.06
-7	0.58%	0.19%	0.50	17	9:8	0.55
-6	0.76%	0.01%	1.10	18	9:9	0.31
-5	-0.55%	0.04%	0.57	20	10:10	0.33
-4	0.23%	0.04%	0.18	19	10:9	0.55
-3	0.62%	0.22%	0.60	18	11:7	1.26
-2	0.31%	0.39%	0.69	18	12:6	1.73)
-1	-0.45%	-0.36%	-0.43	18	6:12	-1.11
0	0.49%	0.28%	1.93$	18	11:7	1.26
+1	0.17%	0.60%	1.92$	19	13:6	1.93)
+2	-0.15%	-0.04%	0.58	18	9:9	0.31
+3	-0.23%	-0.13%	-0.26	18	9:9	0.31
+4	-0.02%	0.17%	1.11	18	10:8	0.78
+5	-0.48%	-0.61%	-1.37	19	5:14	-1.75(
+6	0.24%	0.26%	0.50	19	10:9	0.55
+7	-0.10%	-0.13%	-1.15	19	7:12	-0.83
+8	-0.38%	-0.21%	-0.18	18	8:10	-0.16
+9	-0.07%	0.03%	0.52	18	9:9	0.31
+10	0.23%	0.01%	1.45	17	9:8	0.55

Days	Cumulative Average Abnormal Return Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	0.84%	3.88%	0.41%	2.08*	11:9	0.78
(-10,0)	1.61%	2.61%	1.12%	1.96$	12:8	1.23
(-10,-1)	1.12%	1.84%	1.15%	1.44	11:9	0.78
(0,+10)	-0.28%	2.04%	0.50%	1.50	10:9	0.55
(-5,+5)	-0.04%	2.25%	1.08%	1.67$	12:8	1.23
(-5,-1)	0.16%	0.66%	1.55%	0.73	12:8	1.23
(0,+5)	-0.21%	1.59%	1.38%	1.59	11:8	1.01
(-2,0)	0.36%	0.88%	-0.01%	1.27	9:9	0.31
(-1,0)	0.04%	0.60%	-0.09%	1.06	7:11	-0.63
(0,+1)	0.66%	1.57%	0.91%	2.73**	11:8	1.01
(0,+2)	0.51%	1.81%	0.52%	2.57*	11:8	1.01
(-1,+1)	0.21%	1.39%	0.54%	1.99*	12:7	1.47
(-2,+2)	0.37%	1.91%	0.81%	2.11*	13:6	1.93)
(-3,+3)	0.77%	2.06%	1.16%	1.92$	11:8	1.01
(-4,+4)	0.97%	2.58%	1.11%	2.12*	11:8	1.01

Panel c. For the Capacity Reduction Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	0.08%	-0.25%	0.03	10	3:7	-1.23
-9	-0.66%	-0.12%	-1.10	10	5:5	0.03
-8	0.17%	-0.10%	0.20	9	4:5	-0.30
-7	-0.28%	-0.30%	-0.07	9	3:6	-0.97
-6	-0.64%	-0.80%	-1.62	11	3:8	-1.47
-5	0.25%	0.54%	0.68	10	7:3	1.30
-4	0.02%	-0.12%	0.33	10	5:5	0.03
-3	-0.33%	-0.22%	-0.47	9	4:5	-0.30
-2	-0.94%	-0.85%	-1.57	9	2:7	-1.64
-1	-0.22%	-0.39%	-0.56	9	3:6	-0.97
0	0.05%	0.64%	0.56	9	6:3	1.03
+1	-0.43%	-0.20%	-0.35	11	4:7	-0.87
+2	0.45%	0.09%	0.30	9	5:4	0.36
+3	0.64%	-0.02%	0.66	9	4:5	-0.30
+4	0.31%	0.64%	0.28	9	5:4	0.36
+5	-0.35%	-0.15%	-0.51	10	4:6	-0.60
+6	0.35%	0.12%	1.33	10	5:5	0.03
+7	-2.04%	-0.42%	-0.58	11	4:7	-0.87
+8	-0.10%	0.14%	0.71	10	5:5	0.03
+9	-0.45%	-0.70%	-0.52	10	3:7	-1.23
+10	-0.24%	-0.25%	-0.87	11	4:7	-0.87

Days	Cumulative Average Abnormal Return Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	-4.37%	-1.91%	-5.73%	-0.72	3:8	-1.47
(-10,0)	-2.51%	-2.21%	-2.33%	-1.10	3:8	-1.47
(-10,-1)	-2.56%	-2.57%	-1.80%	-1.32	4:7	-0.87
(0,+10)	-1.80%	0.66%	-1.40%	0.25	4:7	-0.87
(-5,+5)	-0.55%	-0.41%	-1.51%	-0.19	5:6	-0.27
(-5,-1)	-1.23%	-1.06%	-0.59%	-0.67	5:5	0.03
(0,+5)	0.67%	0.65%	-1.10%	0.35	4:7	-0.87
(-2,0)	-1.11%	-0.96%	-1.24%	-0.91	3:6	-0.97
(-1,0)	-0.16%	-0.01%	0.10%	-0.00	6:3	1.03
(0,+1)	-0.37%	0.14%	-0.05%	0.12	5:6	-0.27
(0,+2)	0.07%	0.34%	-0.38%	0.26	4:7	-0.87
(-1,+1)	-0.59%	-0.22%	0.01%	-0.21	6:5	0.34
(-2,+2)	-1.08%	-0.98%	-0.57%	-0.72	5:6	-0.27
(-3,+3)	-0.78%	-0.83%	-1.11%	-0.54	5:6	-0.27
(-4,+4)	-0.45%	-0.47%	0.59%	-0.27	6:5	0.34

Panel d. For the Consolidation of Facilities Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	-0.58%	-0.66%	-1.87$	12	3:9	-1.71(
-9	0.03%	0.06%	0.42	11	6:5	0.32
-8	-1.19%	-0.59%	-2.98**	11	2:9	-2.09<
-7	-0.51%	-0.96%	-1.00	11	4:7	-0.88
-6	-1.10%	-0.96%	-2.94**	11	2:9	-2.09<
-5	0.10%	0.33%	0.01	11	7:4	0.93
-4	0.20%	0.20%	0.46	11	7:4	0.93
-3	0.59%	0.32%	1.38	11	7:4	0.93
-2	-0.54%	0.09%	-1.15	11	6:5	0.32
-1	-0.45%	-0.82%	-1.07	11	5:6	-0.28
0	0.41%	0.09%	1.02	11	6:5	0.32
+1	0.40%	-0.41%	1.20	11	5:6	-0.28
+2	0.33%	0.33%	0.89	13	8:5	0.86
+3	0.84%	0.47%	0.79	13	9:4	1.41
+4	-0.41%	-0.37%	-0.73	13	4:9	-1.36
+5	0.23%	-0.35%	-0.64	13	4:9	-1.36
+6	1.23%	0.87%	2.25*	13	8:5	0.86
+7	0.11%	0.21%	-0.07	12	8:4	1.18
+8	0.17%	0.21%	0.33	11	6:5	0.32
+9	-0.08%	-0.18%	-0.23	11	5:6	-0.28
+10	1.24%	1.19%	2.82**	12	10:2	2.33>

Days	Cumulative Average Abnormal Return Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	0.99%	-0.41%	-3.53%	-0.18	6:7	-0.25
(-10,0)	-3.04%	-3.25%	-2.69%	-2.35*	4:8	-1.13
(-10,-1)	-3.45%	-3.68%	-2.93%	-2.78**	3:9	-1.71(
(0,+10)	4.44%	3.26%	2.55%	2.29*	10:3	1.96>
(-5,+5)	1.67%	0.91%	1.22%	0.64	8:5	0.86
(-5,-1)	-0.10%	-0.15%	-0.00%	-0.17	5:6	-0.28
(0,+5)	1.78%	1.07%	1.43%	0.98	9:4	1.41
(-2,0)	-0.58%	-0.50%	-0.52%	-0.69	3:8	-1.49
(-1,0)	-0.04%	-0.02%	0.22%	-0.04	6:5	0.32
(0,+1)	0.80%	0.92%	1.05%	1.57	6:5	0.32
(0,+2)	1.13%	1.31%	1.00%	1.78$	8:5	0.86
(-1,+1)	0.35%	0.47%	-0.62%	0.66	5:6	-0.28
(-2,+2)	0.14%	0.39%	-0.90%	0.43	6:7	-0.25
(-3,+3)	1.57%	1.31%	0.80%	1.18	7:6	0.30
(-4,+4)	1.35%	1.19%	1.65%	0.93	8:5	0.86

Panel e. For the Other Reasons Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	-1.79%	-1.39%	-1.75$	6	2:4	-0.54
-9	-0.39%	-0.12%	-0.27	7	3:4	-0.07
-8	-0.56%	-0.16%	-1.00	6	2:4	-0.54
-7	-0.20%	0.46%	0.18	6	4:2	1.11
-6	0.00%	0.08%	0.24	6	4:2	1.11
-5	-0.44%	0.04%	-1.14	7	4:3	0.69
-4	1.15%	1.02%	1.03	5	3:2	0.71
-3	1.33%	1.48%	1.26	5	3:2	0.71
-2	-1.25%	-1.29%	-1.57	6	1:5	-1.36
-1	4.25%	3.46%	4.16***	6	5:1	1.93)
0	0.78%	0.70%	0.92	6	4:2	1.11
+1	-2.04%	-0.02%	-0.09	8	4:4	0.33
+2	0.76%	-0.09%	1.21	8	4:4	0.33
+3	-0.01%	-0.15%	0.18	6	2:4	-0.54
+4	-0.06%	-0.20%	-0.07	6	2:4	-0.54
+5	-1.33%	-0.89%	-1.38	5	1:4	-1.09
+6	0.11%	0.29%	-0.55	6	3:3	0.29
+7	0.31%	0.06%	0.55	6	3:3	0.29
+8	-1.16%	-0.76%	-1.08	6	2:4	-0.54
+9	0.54%	0.01%	1.13	5	3:2	0.71
+10	0.09%	-0.20%	0.67	6	3:3	0.29

Days	Cumulative Average Abnormal Return Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	General-ized Sign Z
(-10,+10)	0.08%	2.24%	-1.86%	0.55	3:5	-0.38
(-10,0)	2.88%	1.83%	1.55%	0.53	5:2	1.45
(-10,-1)	2.10%	1.11%	1.94%	0.26	5:2	1.45
(0,+10)	-2.02%	1.12%	-1.26%	0.51	2:6	-1.09
(-5,+5)	3.13%	3.40%	2.00%	1.35	6:2	1.75)
(-5,-1)	5.04%	3.10%	0.88%	1.57	5:2	1.45
(0,+5)	-1.90%	0.30%	0.80%	0.43	4:4	0.33
(-2,0)	3.78%	2.69%	3.21%	2.03*	4:2	1.11
(-1,0)	5.03%	3.98%	4.28%	3.59***	5:1	1.93)
(0,+1)	-1.26%	0.65%	0.52%	0.53	4:4	0.33
(0,+2)	-0.50%	1.34%	0.11%	1.16	5:3	1.04
(-1,+1)	2.98%	3.92%	1.34%	2.71**	6:2	1.75)
(-2,+2)	2.50%	3.31%	2.42%	2.02*	5:3	1.04
(-3,+3)	3.81%	4.49%	3.15%	2.24*	6:2	1.75)
(-4,+4)	4.90%	5.29%	4.07%	2.30*	5:3	1.04

Panel f. For the Unspecified Reason Sample

Day	Average Abnormal Return	Median Abnormal Return	Z	N	Positive: Negative	Generalized Sign Z
-10	0.18%	0.06%	0.56	14	8:6	0.63
-9	-0.21%	0.02%	0.41	15	8:7	0.35
-8	0.61%	0.33%	1.25	15	10:5	1.39
-7	-0.63%	-0.05%	-0.23	14	7:7	0.09
-6	0.02%	-0.12%	-0.61	13	5:8	-0.74
-5	0.61%	0.35%	1.35	13	10:3	2.03>
-4	0.79%	0.32%	0.95	14	8:6	0.63
-3	1.65%	0.94%	2.54*	15	11:4	1.90)
-2	0.26%	0.22%	0.46	15	10:5	1.39
-1	-1.24%	-0.38%	-2.68**	15	5:10	-1.20
0	1.41%	0.37%	1.49	15	9:6	0.87
+1	2.05%	0.95%	2.45*	15	9:6	0.87
+2	0.31%	0.15%	1.17	15	9:6	0.87
+3	-1.33%	-0.55%	-2.70**	15	5:10	-1.20
+4	-0.22%	-0.01%	0.52	15	7:8	-0.16
+5	-0.38%	-0.37%	-0.86	15	7:8	-0.16
+6	0.69%	0.09%	0.59	15	9:6	0.87
+7	0.32%	0.11%	1.09	15	9:6	0.87
+8	-0.29%	-0.50%	-1.72$	14	4:10	-1.51
+9	0.81%	0.47%	1.98*	14	8:6	0.63
+10	0.17%	-0.36%	-0.79	15	6:9	-0.68

Days	Cumulative Average Abnormal Return Equally Weighted	Precision Weighted	Median Cumulative Abnormal Return	Z	Positive: Negative	Generalized Sign Z
(-10,+10)	5.57%	3.00%	3.40%	1.58	10:5	1.39
(-10,0)	3.44%	2.27%	2.26%	1.66$	10:5	1.39
(-10,-1)	2.03%	1.66%	1.58%	1.26	10:5	1.39
(0,+10)	3.54%	1.34%	1.94%	0.98	9:6	0.87
(-5,+5)	3.91%	1.96%	1.40%	1.39	8:7	0.35
(-5,-1)	2.08%	1.09%	0.81%	1.14	9:6	0.87
(0,+5)	1.83%	0.86%	1.37%	0.85	10:5	1.39
(-2,0)	0.43%	-0.31%	-0.30%	-0.42	6:9	-0.68
(-1,0)	0.17%	-0.50%	-0.62%	-0.84	4:11	-1.71(
(0,+1)	3.45%	1.63%	0.81%	2.79**	12:3	2.42>
(0,+2)	3.77%	2.10%	1.40%	2.95**	14:1	3.45>>>
(-1,+1)	2.22%	0.51%	-0.08%	0.73	7:8	-0.16
(-2,+2)	2.79%	1.18%	1.18%	1.29	8:7	0.35
(-3,+3)	3.11%	1.13%	0.18%	1.04	8:7	0.35
(-4,+4)	3.68%	1.74%	1.57%	1.40	8:7	0.35

$, (,) significant at .10 *, <, > significant at .05

, <<, >> significant at .01 *, <<<, >>> significant at .001

Appendix 7. The Results from the Regression Models

Panel a. The Regression Analysis for the Type of Facility and the Stated Reasons[a]

Variables	Model 1	Model 2	Model 3
Intercept	0.012934	0.034586**	0.026432
	(0.504)	(2.365)	(0.920)
Headquarters	-0.013491		0.008081
	-(0.484)		(0.264)
Division	-0.012825		-0.001138
	-(0.459)		-(0.038)
Plant	0.00566		0.02444
	(0.200)		(0.808)
Business Expansions		-0.038056**	-0.034169***
		-(2.006)	-(1.692)
Cost Savings		-0.030254***	-0.031581
		-(1.623)	-(1.591)
Capacity Reduction		-0.039679***	-0.050281**
		-(1.661)	-(2.001)
Consolidation		-0.01551	-0.016659
		-(0.567)	-(0.590)
Other Reason		-0.049182**	-0.055243**
		-(1.983)	-(2.074)
R-square	0.0229	0.0734	0.1006
Adjusted R-square	-0.0137	0.014	0.0046
N	83	83	83

[a] The t-values associated with the coefficients are given in the parenthesis.
*, **, and *** refer to significance at 0.01, 0.05 and 0.10 level, respectively.

Panel b. The Regression Analysis for the Provinces and Major Cities[a]

Variables	Model 4	Model 5
Intercept	0.009552	0.00518
	(0.940)	(0.582)
Montreal	0.000335	
	(0.020)	
Toronto	-0.011361	
	-(0.664)	
Calgary	-0.019942	
	-(0.645)	
Edmonton	0.006556	
	(0.270)	
Vancouver	-0.017932	
	-(0.580)	
Quebec		0.00254
		(0.161)
Ontario		0.009978
		(0.562)
Alberta		-0.016752
		-(0.551)
British Columbia		-0.012059
		-(0.444)
R-square	0.0163	0.0114
Adjusted R-square	-0.0468	-0.0386
N	83	83

[a] The t-values associated with the coefficients are given in the parenthesis.
*, **, and *** refer to significance at 0.01, 0.05 and 0.10 level, respectively.

Panel c. The Regression Analysis Using the Industry and Time Dummy Variables[a]

Variables	Model 6	Model 7	Model 8
Intercept	0.01418	0.00541	0.004485
	(0.433)	(0.855)	(0.692)
Service	-0.022281		
	-(0.653)		
Manufacturing	0.005288		
	(0.154)		
Resource	-0.003902		
	-(0.110)		
Referendum@1995		0.021907	0.048672
		(0.534)	(1.180)
ElectionPQ1			0.008563
			(0.208)
ElectionPQ2			0.007067
			(0.122)
R-square	0.0471	0.0035	0.0176
Adjusted R-square	0.0114	-0.0087	-0.0192
N	83	83	83

[a] The t-values associated with the coefficients are given in the parenthesis.
*, **, and *** refer to significance at 0.01, 0.05 and 0.10 level, respectively.