POLITICAL RISK AND STOCK MARKET RETURNS: EVIDENCE FROM THE 1995 QUEBEC REFERENDUM

In this study, we investigate the effect of the October 30th, 1995 Quebec referendum on the common stock returns of Quebec firms. Our results show that the referendum had an impact on the stock returns of Quebec firms. We also find that the effect of the referendum varied with the political risk exposure of Quebec firms, that is, the structure of assets and the degree of foreign involvement.

I. Introduction

The objective of this paper is to examine the impact of political risk associated with a possible Quebec independence on stock returns of Quebec firms. To do so, we examine the stock market reaction to the October 30th 1995 Quebec referendum. Several facts argue in favor of such a study. First, the presence of political risk is a worldwide phenomenon that affected most national stock markets in the twentieth century (Jorion and Goetzmann (1999)). Second, our study involves a developed financial market in which financial information is easily available for most companies. Furthermore, variations in Quebec political risk are “pure” events that are unrelated, for example, to episodes of market liberalization, as is often the case in emerging markets. Thus, our study makes it possible to more accurately assess how variations in political risk affect stock returns. Third, the particularity of the October 30th, 1995 Quebec referendum is that opinion polls released after October 7th, 1995 could not clearly determine a winning side for the referendum. In that sense, there was a unique climate in Canada at that time since financial markets could not resolve the political uncertainty before the actual vote took place. This is not typical of election events for which opinion polls can usually reveal the outcome within a reasonable margin of errors. Finally, very few studies (Phillips-Patrick, 1989; Bailey and Chung, 1995, Chan and Wei, 1996) have examined the impact of political risk on the stock market at the microeconomic level. The existing empirical literature has focused on the country as a whole and has implicitly assumed that political risk affects all firms identically.

For the purpose of this study we consider that all Quebec firms are not equally exposed to political risk. We construct different firm portfolios on the basis of two components of firms’ exposure to political risk. First, Quebec firms with large foreign operations should be less affected by Quebec sovereignty than Quebec firms whose activities are limited to local markets. Second, firms that are mainly characterized by growth options should be less exposed to political

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1 The authors gratefully acknowledge helpful comments from K. Fischer, P. Savaria, J.-G. Simonato and financial support from the FQRSC, the SSHRC and IFM2.
risk since they are more mobile than firms characterized mainly by assets in place. The composition of these portfolios enables us to assess the impact of Quebec political risk on stock returns based on the degree of exposure to political risk.

To evaluate the impact of Canadian political risk on our portfolios of stocks, we consider an event study. We focus on the Quebec referendum of October 30th, 1995, an event of great importance since it could well have increased the perception of political risk in Quebec and in Canada. In fact, during the referendum campaign, the Toronto Stock Exchange faced its sixth historically largest drop. Furthermore, the 1995 referendum campaign also had a significant effect on the value of the Canadian dollar (Leahy and Thomas, 1996) and the Canadian bond yields (Johnson and McIlwrath, 1998). Finally, as discussed above, this event has an interesting feature: the political uncertainty resulting from the referendum could not be resolved before the actual referendum took place since opinion polls did not point to a clear winner side.

II. Theoretical framework

A. Background

Political risk exists when discontinuities occur in the business environment of firms. To constitute a risk these changes in the business environment must potentially affect the profitability of a particular firm. In Canada, political risk is associated with the possible separation of the province of Quebec from the Canadian Confederation. Political uncertainty in Quebec has existed for a long period of time. Most observers of the Canadian political scene trace the political uncertainty of Quebec to the creation of the Parti Quebecois in 1968, a political party dedicated to Quebec sovereignty. Following defeats in the provincial elections of 1970 and 1973, the Parti Quebecois won the 1976 elections and formed Quebec’s government. This led to the first episode of political uncertainty ending in 1980 with a defeat in a referendum on sovereignty (with 60% of voters opposing to give a mandate to the Quebec government to negotiate “sovereignty-association” with the rest of Canada). This led to a period of political calm in the 1980s. The second episode of political uncertainty began in the 1990s with the failed efforts of the Canadian and provincial governments to solve the “Quebec problem”: the Meech Lake Accord did not receive ratification by all Canadian provinces in 1990 and the Charlottetown Accord was rejected in a national Referendum in 1992. Further evidence of growing support for sovereignty occurred in 1993, when the Bloc Quebecois under Lucien Bouchard’s leadership became the official opposition in Ottawa. In 1994, the Parti Quebecois, under Jacques Parizeau, won Quebec provincial elections and promised to hold a referendum on sovereignty. The campaign began on September 7 1995, when the referendum question was officially announced. The referendum question was stated as follows:

“Do you agree that Quebec should become sovereign, after having made a formal offer to Canada for a new economic and political partnership, within the scope of the bill respecting the future of Quebec and the agreement signed on June 12, 1995?”

Given that the YES side was lacking momentum at the beginning of the referendum campaign, the Parti Quebecois nominated Lucien Bouchard on October 7th as chief negociator for Quebec in the event of a YES vote. Momentum in the campaign then started to change and the climate of political uncertainty became only stronger as the referendum date approached. The 1995 referendum on sovereignty was defeated by a margin of one per cent. This result suggests that it was difficult to predict the referendum outcome before the vote took place.
B. Political risk and stock prices

The impact of political risk on stock prices is based on the premise that the value of a firm is equal to the present value of its expected cash flows, whereas the discount rate represents investors’ required rate of return. We now discuss the impact of a possible separation of Quebec on the two components of the value of a firm.

A Quebec separation could lead to changes in the cash flows of Quebec-based firms through the uncertainty associated with the fiscal, trade, migration and investment policies. On the fiscal front, Quebec’s independence could lead to a tax increase to finance the transition costs. On the international front, the renegotiation of several international treaties, such as NAFTA, is likely to create a climate of uncertainty. The waiting period related to this renegotiation of NAFTA could cause a loss of revenues for local firms exporting to the United States and Mexico, affecting the future cash flows of these firms. Quebec’s independence could lead some firms to move their head office from Quebec to another Canadian province, thus contributing to the brain drain that has plagued Quebec for the last twenty-five years. The departure of people and firms could have a negative impact on the cash flows of the Quebec government (thus leading to a tax increase to offset the reduction of its tax basis) and local firms. Last but not least, the political uncertainty associated with a possible independence of Quebec could lead to a reduction in investments in Quebec and a decrease in the cash flows of Quebec-based firms (see Altug, Demers and Demers, 2000).

A Quebec separation could also lead to changes in discount rates through the uncertainty associated with monetary policy. As argued by Altug, Demers and Demers (2000), separation from the Canadian confederation would be costly for Quebec, which could well face a financial crisis similar to or even worse than Mexico’s 1994 crisis. First, Quebec would suffer from a large current account deficit, as did Mexico. Second, it would have a large debt problem amounting to over 120% of its GDP (in contrast to Mexico’s 40%). The uncertainty on the federal debt between Quebec and Canada sharing could also lead to higher interest rates. The behavior of the Canadian dollar following a separation is also unforeseeable. Anxious about the monetary policy to be followed by both Quebec and Ottawa, Canadians could convert most of their assets into American dollars. This would inevitably lead to a fall in the value of the Canadian dollar and a rise in interest rates. This would mean an increase of the cost of capital of Quebec-based firms.

III. Hypotheses and methodology

In this section, we describe the measures used to assess the degree of political risk exposure for Quebec-based firms. We then develop several hypotheses to test the impact of the referendum of October 1995 on stock returns of Quebec firms on the basis of these exposure measures. Finally, we describe the empirical models used in this study.

A. Measures of exposure to political risk and hypotheses

We use two measures to assess the degree of political risk exposure of Quebec firms. The first measure evaluates the firm’s degree of mobility based on growth options. Myers (1977) breaks the value of a firm down to two components: the assets in place (the value of which does not depend on the firm’s future investments) and growth options. Growth options play an important role in decreasing the exposure of a firm to political risk (Phillips-Patrick, 1989). Firms whose value is mainly determined by opportunities for growth are less affected by political risk since they can easily move their operations to another region without incurring excessive costs.
Thus, a firm in the pharmaceutical field whose value is determined by growth opportunities should be less affected by political risk since the majority of its investments involve research and development activities that are easily transferable. Furthermore, political interference towards these firms is less likely if politicians value growth options. Conversely, firms whose value is mainly determined by assets in place should be more affected by political risk, given the high cost of moving these assets. For example, a firm in the aluminum industry could not easily transfer such investments to another region.

The second measure of exposure to political risk uses the firm’s degree of internationalization based on the number of countries in which it owns subsidiaries. International foreign investment could create new risk factors such as political risk and foreign exchange risk. However, several studies maintain that these new risks are diversifiable (e.g., Goldberg and Heflin, 1995). In fact, multinational companies are present in a number of domestic markets from which they can minimize the impact of fluctuations in interest rates, cost of input and salaries by transferring their operations from one market to another. Thus a multinational firm which is headquartered in Quebec but has operations in other countries can diversify political risk away and will be less affected by a possible Quebec independence than a company conducting business solely at the local level.

B. Hypotheses

We want to test the impact of the 1995 referendum on Quebec firm portfolios of stock returns. More specifically, we ask the question: Have the results of the October 30th, 1995 referendum affected the stock returns of Quebec firms? Ex ante the answer to that question was uncertain considering that the opinion polls preceding the actual referendum could not identify a clear winning side. In fact, this is clearly revealed by the referendum results which showed that 50.6% of the Quebec population voted NO to the referendum question. Different outcomes for stock returns were possible after the referendum. First, Quebec firms could show an abnormal positive return since Quebec were to remain a Canadian province and in that context investors’ uncertainty towards the economic impact of an independent Quebec would be reduced. Such a reduction would have a positive impact on stock returns. The second possible outcome would be almost no impact for Quebec firms. The results could be interpreted as a split in the Quebec population over the national unity problem. It would mean that Quebec could still separate since another referendum could take place in the future. In such a case, the outcome of the 1995 referendum would not succeed in eliminating the uncertainty with respect to Quebec’s future in the Canadian Confederation. The impact of the referendum on the stock returns of Quebec firms would then be negligible.

The null hypothesis H1 to study the effect of the October 30th, 1995 referendum on stock returns is as follows:

$H1 : \text{The results of the October 30th, 1995 referendum on Quebec independence do not affect the stock returns of portfolios of Quebec firms.}$

In the case where this hypothesis is rejected, it would be of interest to assess whether the effect of the referendum results on stock returns varies with the firm’s exposure to political risk. The null hypothesis is stated as follows:

$H2 : \text{The results of the October 30th, 1995 referendum on Quebec independence affect the stock returns of all Quebec firm portfolios in the same way.}$
C. Methodology

In this paper we use a classical event study methodology in two different settings. First, since the referendum date is the same for all portfolios, we estimate abnormal returns in a multivariate equations setting to deal with clustering effects (MacKinlay, 1997) and conditional heteroscedasticity. Second, we believe that it is important to assess the robustness of our results to the time varying volatility of portfolio returns. Bollerslev, Chou and Kroner (1992) highlight the importance of taking time varying volatility of stock returns with a ARCH and GARCH parameterization. In an event study framework, this adjustment is important when an event leads to changes in volatility. We will therefore verify whether abnormal returns remain using a different method to account for conditional heteroscedasticity. Let i be the index on portfolios most exposed to political risk (LGO, DF), j be the index on portfolios least exposed to political risk (HGO, MF), \( R_{i,t} \) (\( R_{j,t} \)) be daily returns on portfolio i (j) at time t, \( R_{m,t} \) be the market return at time t, \( D_i \) be a dummy variable that takes the value of one on the day of October 31\(^{st}\) and zero otherwise. \( \tau_i \) (\( \tau_j \)) is the parameter used to measure the abnormal return on the day of the window event for portfolio i (j) and \( \varepsilon_{it} \) (\( \varepsilon_{jt} \)) are error terms from the regression on date t for portfolio i (j). This term is normally distributed with a mean of zero and a constant variance. The stock return equations we estimate using White (1980) correction for the covariance matrix are the following:

\[
R_{i,t} = \alpha_i + \beta_i R_{m,t} + \delta_i R_{i,t-1} + \tau_i D_i + \varepsilon_{i,t} \tag{1}
\]

\[
R_{j,t} = \alpha_j + \beta_j R_{m,t} + \delta_j R_{j,t-1} + \tau_j D_i + \varepsilon_{j,t} \tag{2}
\]

Our model includes an autoregressive term of order one as a predictor of portfolio returns in order to account for problems of non synchronous trading (Lo and MacKinlay (1990)) and for bid-ask spread effects identified by Stoll and Whaley (1990) in indices that include only a small number of underlying stocks.

Furthermore, we want to check empirically whether we still observe abnormal returns once we use models that account for time variation of stock returns volatility. In order to do that, we use GARCH (Engle (1982), Bollerslev (1986)) with BEKK parameterization (Engle and Kroner (1995)) to estimate the volatility of stock returns. This model takes the asymmetry of volatility into account. The asymmetry of volatility is an important feature of stock returns (Engle and Ng, 1993, Glosten, Jagannathan and Runkle, 1993 and Bekaert and Wu, 2000). It prevails when negative and positive shocks to the market do not create symmetric reactions.

When using a GARCH parameterization, we let \( \Gamma \) be a 2×2 positive definite matrix, \( B \) be a symmetric 2×2 matrix for GARCH effects, \( A \) be a symmetric 2×2 matrix for ARCH effects, \( G \) be a symmetric 2×2 matrix measuring asymmetric effects in the volatility of stock returns, \( \eta_t \) be the vector \( \left( \eta_{it}, \eta_{jt} \right) \), where \( \eta_{it} \) is max \( \left[ 0, -\varepsilon_{it} \right] \) and \( \eta_{jt} \) be max \( \left[ 0, -\varepsilon_{jt} \right] \), \( \varepsilon_{it} \) is the vector \( \left( \varepsilon_{it}, \varepsilon_{jt} \right) \) which follows a bivariate normal distribution of mean zero and conditional variance \( H_t \). The conditional variance model we consider is as follows:

\[
H_t = \Gamma + BH_{t-1}B' + A \varepsilon_{t-1} \varepsilon_{t-1}' A' + G \eta_{t-1} \eta_{t-1}' G' \tag{3}
\]
IV. Data

A. The sample of Quebec Firms

Our initial sample consists of 102 firms, headquartered in the Province of Quebec and listed on the Montreal Stock Exchange and/or on the Toronto Stock Exchange. The data source for stock returns is Datastream. The accounting data used to measure growth options are taken from Stock Guide, a publication that provides financial information on Canadian firms. The final sample for which we have both common stock prices and accounting data consists of 71 Quebec firms. The sampled firms are then subdivided into two sets of portfolios according to our measures of political risk exposure: (1) growth options versus assets in place; (2) domestic versus multinational operations. The first subdivision creates two portfolios of Quebec firms: (1) firms with high growth options (HGO) and (2) firms with low growth options (LGO). To classify a Quebec firm as having HGO, the market value to book value ratio must be greater than the median of the sample. This ratio measures the growth opportunities of a firm because the market value of a firm is the value of both assets in place and growth options while the book value of the firm reflects only the assets in place. The second subdivision creates two portfolios of Quebec firms according to the level of foreign activities: the first consists of 45 purely domestic firms (DF) and the second of 26 multinational firms (MF) that operate in at least one foreign country. We draw information regarding the number of foreign subsidiaries from Who Owns Whom 1989, a Dun and Bradstreet publication. These directories include a list of subsidiaries and their countries for the sample of Quebec firms. The year 1989 (the year preceding the second episode of political uncertainty in Quebec) is used to measure the two criteria for political risk exposure. The portfolios are then kept fixed over the time period covered by our study. The weights are chosen according to the market value of each firm in the overall value of the portfolio in 1989. Rebalancing only occurs if firms drop out during our sampling period.

The size distribution of Quebec firm portfolios, with size measured as the book value of total assets reveals that, as expected, Quebec multinational firms are large whereas purely domestic Quebec-based firms are either small or medium-sized. As for the two portfolios of Quebec firms exhibiting different levels of growth options, we find that the percentage of small firms with low growth options is slightly larger than the percentage of firms with high growth options. Our Quebec firm portfolios are spread over a wide range of industries, since most industries are represented in the four portfolios of Quebec firms. Most Quebec multinational firms are characterized by a high level of growth options while most domestic firms operating in Quebec are characterized by a low level of growth options. Furthermore, 96% of Quebec multinational firms operate in at least two foreign countries and 50% of the multinational firms in our sample operate in at least seven foreign countries. In summary, most sample Quebec multinational firms operate in a large number of countries and are characterized by growth options. Furthermore there is no industry concentration in the sampled firms.

V. Results

A. The link between political risk and stock returns from a sample of Quebec firms

Tables 1 and 2 present results on stock returns estimations from equations (1) and (2) applied to different portfolios of Quebec firms with different exposures to political risk. The results reveal that the referendum outcome did affect the portfolio returns of Quebec firm
portfolios. The effect of the referendum results on these stock returns is positive and statistically significant for all four portfolios. F-tests reject the null hypothesis (H1) for which there were no impact on abnormal returns when the referendum results were announced. These results suggest that the 1995 referendum had an informational content for investors. Therefore the fact that Quebec would remain within the Canadian confederation was good news to financial markets. Investors associated the NO vote to the 1995 referendum question with a reduction in the economic and political uncertainty. We also note that the effect of the referendum on portfolio returns is larger for firms most exposed to political risk than for firms less exposed to political risk. The impact of political risk is less important for firms with high growth options or multinational firms than for those with low growth options or domestic firms, respectively. Tests of H2 allow us to determine whether this difference is statistically significant. Our tests reject the null hypothesis when we consider the internationalization criterion as a measure of exposure to political risk. We find that the positive reaction of the stock market to the outcome of the 1995 referendum is larger for domestic firms than for multinational firms. This evidence is consistent with our prediction that domestic firms are more exposed to political uncertainty (risk) than multinational firms. We cannot reject H2 when we consider the growth option criterion. Our tests point to abnormal returns that are alike whether we consider low growth option or high growth option portfolios.

**Table 1: Stock return equations for portfolios of Quebec firms with low (LGO) and high growth options (HGO)**

<table>
<thead>
<tr>
<th>Panel A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock return estimations of equations (1) and (2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>α</th>
<th>β</th>
<th>δ</th>
<th>τ</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGO</td>
<td>-0.002</td>
<td>0.423*</td>
<td>0.087*</td>
<td>0.203*</td>
</tr>
<tr>
<td></td>
<td>(0.021)</td>
<td>(0.031)</td>
<td>(0.021)</td>
<td>(0.089)</td>
</tr>
<tr>
<td>HGO</td>
<td>0.025</td>
<td>0.310*</td>
<td>0.129*</td>
<td>0.161*</td>
</tr>
<tr>
<td></td>
<td>(0.014)</td>
<td>(0.021)</td>
<td>(0.020)</td>
<td>(0.060)</td>
</tr>
</tbody>
</table>

**Panel B**

\[ H_1 : \tau_{LGO} = \tau_{HGO} = 0 \]

\[ H_2 : \tau_{LGO} = \tau_{HGO} \]

| F-statistic | 4.20* | 0.27 |

* represents significant coefficients at the 5% level of significance. Standard errors, based on White’s (1980) heteroskedastic covariance matrix, are in parentheses. The sample period goes from January 1990 to December 1996. Daily stock returns are collected from Datastream.
### Table 2: Stock return equations for portfolios of Quebec domestic (DF) and multinational firms (MF)

**PANEL A**

<table>
<thead>
<tr>
<th></th>
<th>$\alpha$</th>
<th>$\beta$</th>
<th>$\delta$</th>
<th>$\tau$</th>
</tr>
</thead>
<tbody>
<tr>
<td>DF</td>
<td>-0.004</td>
<td>0.140*</td>
<td>-0.120*</td>
<td>0.590*</td>
</tr>
<tr>
<td></td>
<td>(0.016)</td>
<td>(0.024)</td>
<td>(0.023)</td>
<td>(0.069)</td>
</tr>
<tr>
<td>MF</td>
<td>0.018</td>
<td>0.357*</td>
<td>0.110*</td>
<td>0.161*</td>
</tr>
<tr>
<td></td>
<td>(0.015)</td>
<td>(0.022)</td>
<td>(0.022)</td>
<td>(0.062)</td>
</tr>
</tbody>
</table>

**Panel B**

$H_1$ is the hypothesis testing whether all $\tau$ are equal to zero. $H_2$ is the hypothesis testing whether all $\tau$ are equal among themselves.

<table>
<thead>
<tr>
<th></th>
<th>$H_1 : \tau_{DF} = \tau_{MF} = 0$</th>
<th>$H_2 : \tau_{DF} = \tau_{MF}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>36.82*</td>
<td>25.4*</td>
</tr>
</tbody>
</table>

* represents significant coefficients at the 5% level of significance. Standard errors, based on White’s (1980) heteroskedastic covariance matrix, are in parentheses. The sample period goes from January 1990 to December 1996. Daily stock returns are collected from Datastream.

We can put forward two elements to explain this last result. It is possible that results obtained are sensitive to the selected event window. To address this issue, in Table 3, we present F-tests for different event windows (-10, +10; -6, +6, -3, +3). The statistics reveal that, whatever the event window, the F tests cannot reject the null hypothesis that the market response of portfolios of HGO and LGO firms to the referendum outcome does not differ. It is also possible that the measure used to evaluate the growth options is not appropriate to evaluate asset mobility accurately. In this paper, we use the ratio market value to book value of assets to proxy asset mobility. Other measures of growth option such as Tobin’s q exist. Tobin’s q is defined as the ratio of the book value of debt plus the market value of equity divided by the book value of total assets (Opler and Titman (1993)). Two elements distinguish q ratios and market to book values of assets: the addition of the book value of debt to the market value of equity and the use of the replacement costs of all assets rather than the book value of all assets (Ross, Westerfield and Jordan (1999)). When we use Tobin’s q (see results in Table 4), we observe that the value of the F statistic (3.82) is significant. This result suggests that the abnormal returns associated with the outcome of the referendum is higher for low growth option firms than for high growth option firms. However, the results vary with the selected event window. (Table 5)

\[^2\] We do not consider development and research, an other measure of asset mobility, because data is available only for thirteen Quebec (mostly multinational) firms.
Table 3: Tests of \( H_2 \) for different event windows

\[
H_2 : \quad \tau_{LGO} = \tau_{HGO}
\]

<table>
<thead>
<tr>
<th>Event window</th>
<th>F-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>(-10, +10)</td>
<td>0.48</td>
</tr>
<tr>
<td>(-6, +6)</td>
<td>0.93</td>
</tr>
<tr>
<td>(-3, +3)</td>
<td>1.68</td>
</tr>
</tbody>
</table>

* represents significant coefficients at the 5% level of significance. LGO is the portfolio of Quebec firms with low growth options and HGO is the portfolio of Quebec firms with high growth options. The sample period goes from January 1990 to December 1996. Daily stock returns are collected from Datastream.

Table 4: Stock return equations for portfolios of Quebec firms with low and high growth options using a different proxy for growth option

Panel A

<table>
<thead>
<tr>
<th></th>
<th>( \alpha )</th>
<th>( \beta )</th>
<th>( \delta )</th>
<th>( \tau )</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGO</td>
<td>0.015</td>
<td>0.344*</td>
<td>0.101*</td>
<td>0.205*</td>
</tr>
<tr>
<td></td>
<td>(0.016)</td>
<td>(0.023)</td>
<td>(0.021)</td>
<td>(0.048)</td>
</tr>
<tr>
<td>HGO</td>
<td>0.017</td>
<td>0.373*</td>
<td>0.110*</td>
<td>0.087</td>
</tr>
<tr>
<td></td>
<td>(0.020)</td>
<td>(0.029)</td>
<td>(0.021)</td>
<td>(0.059)</td>
</tr>
</tbody>
</table>

Panel B

\( H_1 \) is the hypothesis testing whether all \( \tau \) are equal to zero. \( H_2 \) is the hypothesis testing whether all \( \tau \) are equal among themselves.

<table>
<thead>
<tr>
<th>F-statistic</th>
<th>( H_1 : \quad \tau_{LGO} = \tau_{HGO} = 0 )</th>
<th>( H_2 : \quad \tau_{LGO} = \tau_{HGO} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.36*</td>
<td></td>
<td>3.82*</td>
</tr>
</tbody>
</table>

* represents significant coefficients at the 5% level of significance. Standard errors, based on White’s (1980) heteroskedastic covariance matrix, are in parentheses. The sample period goes from January 1990 to December 1996. Daily stock returns are collected from Datastream.

Table 5: Tests of \( H_2 \) for different event windows using a different proxy for growth options

\[
H_2 : \quad \tau_{LGO} = \tau_{HGO}
\]

<table>
<thead>
<tr>
<th>Event window</th>
<th>F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>(-10, +10)</td>
<td>0.12</td>
</tr>
<tr>
<td>(-6, +6)</td>
<td>0.11</td>
</tr>
<tr>
<td>(-3, +3)</td>
<td>3.71*</td>
</tr>
</tbody>
</table>

* represents statistical significance at the 5% level of significance. LGO is the portfolio of Quebec firms with low growth options and HGO is the portfolio of Quebec firms with high growth options. The sample period goes from January 1990 to December 1996. Daily stock returns are collected from Datastream.
We also studied the mean and the standard deviation of abnormal returns of Quebec firm portfolios over the event window [-10, +10]. Essentially, the results suggest that the market reaction of Quebec firms to the referendum campaign was negative before the announcement of the vote. For example, six days before the referendum took place, the mean abnormal returns for the four portfolios were significant and negative. This date coincides with the announcement of an opinion poll favourable (for the first time) to a *YES* vote to the referendum question. The mean abnormal returns on the first trading day following the announcement of the referendum outcome is positive and significant. Furthermore, our results show that mean abnormal returns on the subsequent days are generally insignificant. This evidence is consistent with the efficient market hypothesis.

**B. The link between political risk and stock returns from a sample of U.S. firms**

To ensure that the October 1995 referendum is the source of abnormal returns brought to light for the Quebec firm portfolios, we consider a control sample of U.S. firms. We create this control sample as follows. First, to control for the industry in which the Quebec firms belong, we match each Quebec to all U.S. firms in the same four-digit SIC code. Second, among these, we select the firm whose total assets, value of growth options (measured by the ratio of market to book value of assets) and degree of internationalization (measured by the number of foreign countries in which the firm own subsidiaries) are between 70 and 130 per cent of the size, the value of growth options and the degree of internalization of the Quebec-based firm of 1989. The results observed for Quebec firms could be linked to the characteristics of the sample. In the same vein, other events of non-political nature could have taken place on October 30th, 1995, the referendum date. The results of the tests, unreported but available from the authors, do not provide evidence of a reaction of the U.S. stock market to the announcement of the Quebec referendum outcome. This is further confirmation that the observed abnormal returns of Quebec firm portfolios can be traced to the political risk associated with the 1995 referendum on Quebec separation from the Canadian confederation.

**C. Robustness checks**

In the previous sections, we used multivariate equations estimations to investigate for the presence of abnormal returns in portfolios of Quebec firms. In this section, we model conditional residual variances using a GARCH process. The objective is to examine whether abnormal returns found in the previous sections are still present when one uses a different estimation approach. Our unreported results indicate that the behaviour of normal returns does not change markedly following the GARCH modelling of conditional residual variances. Indeed, the effect of the 1995 referendum on returns of the four Quebec firm portfolios is still significant and positive.

**VI. Conclusion**

In this paper, we investigate the impact of the political risk associated with a possible Quebec independence on the stock returns of Quebec-based firms. To do so, using an event study methodology, we examine the stock market’s reaction to the October 30th 1995 Quebec referendum. Furthermore, we consider that Quebec firms are not equally exposed to political risk and we construct four portfolios of Quebec-based firms on the basis of two components of firm’s
exposure to political risk: the structure of assets (assets in place versus growth options) and the degree of foreign involvement.

Our results show that the effect of the referendum results on these stock returns is positive and statistically significant for all four portfolios. This evidence suggests that the 1995 referendum had an informational content for investors: the fact that Quebec would remain within the Canadian confederation was good news to financial markets. Investors associated the NO vote to the 1995 referendum with a reduction in the economic and political uncertainty. This reveals that political uncertainty can affect stock returns when the uncertainty cannot be resolved by financial markets. We also note that the effect of the referendum on portfolio returns is larger for firms most exposed to political risk than for firms less exposed to political risk. The impact of political risk is less important for firms with high growth options or multinational firms than for those with low growth options or domestic firms, respectively. However, this result holds only when we use Tobin’s q ratio as a proxy for growth options.

The analysis of the mean abnormal returns of the four portfolios of Quebec firms reveals that these returns tended to be negative in the period preceding the actual referendum. The mean abnormal returns on the first trading day following the announcement of the referendum outcome is positive and significant. Furthermore, we find that mean abnormal returns on the subsequent days are generally insignificant. This evidence is consistent with the efficient market hypothesis.

References


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