Canadian Market Reaction to Canadian Firms' Cross-listing on European Stock

Exchanges

by

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Abstract

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This paper tests how the Canadian stock market reacts to Canadian firms' cross-listing on
European stock exchanges. Sixty-four Canadian firms that are cross-listed are collected
through the period of 2001-2012. Most of the sample firms belong to the natural resource
industry. An event study is used to test abnormal return following the cross-listing
announcements.

Canadian market showed a negative reaction to cross-listing in Europe around
announcement date at the 10% significance level. Cross-listing in London got better
market reaction than on other European stock exchanges. However this difference is not
significant. The test results supported findings of previous studies that the investor
protection provided by cross-listing is most valued by market.

Market reaction should not be the main motivation for Canadian firms when making
cross-listing decisions. However, if other benefits and costs are the same for cross-listing
on different destinations, a company should choose destinations like U.S. or London
which will result in a more positive market reaction.

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Chapter 1: Introduction

1.1 Purpose of Study

Investors are trying to diversify their investment globally. There are also many firms that

choose to list equity shares on foreign stock exchanges in additions to the domestic

exchange, which is known as cross-listing. Many Canadian firms choose to cross-list in

U.S. and European stock exchanges. How the market reacts to this kind of firm activity is

uncertain. Meanwhile, there are many destinations for a firm to choose even after they

have decided to cross-list. Although United States seems to be the first choice for

cross-listing, many Canadian firms are cross-listed in Europe. How will the market react

to firms' cross-listing in different markets?

This paper tests how the Canadian market reacts to Canadian firms' cross-listing in

European stock exchanges, including London stock exchange. This paper will also

investigate the differences in market reaction between the firms that choose to cross-list

on London stock exchange and on other European stock exchanges.

1.2 Background

According to Roosenboom and van Dijk (2009) there are four main types of benefits to

cross-listing: market segmentation, market liquidity, information disclosure, and investor

protection. Sarkissian and Schill (2009) stated that firms that cross-list experience

valuation gains with the reduction of market barriers. Roosenboom and vanDijk (2009)

tested firms from 44 different countries cross-listed on eight major stock exchanges from 1982 to 2002. The results confirmed high abnormal return for firms cross-listing on U.S. and London exchanges than others.

According to Doidge, Karolyi and Stulz (2009), while New York was still the most competitive exchange for firms to cross-list, the number of companies that chose to cross-list on London exchange has increased significantly since 2001. According to Rousseau (2007), Alternative Investment Market (AIM), which was created in 1995 as part of the London Stock Exchange, attracted an increasing number of smaller companies around the world, including Canadian firms.

According to King and Segal (2004), among all the Canadian firms cross-listed in the U.S., only those actively traded in the U.S. got long-term valuation gains compared with Canadian firms that were only listed on Canadian stock exchanges. The authors concluded that the market only valued stocks of Canadian firms with higher investor protection and operated actively under stricter supervision of the U.S. Securities and Exchange Commission (SEC). According to Resse and Weisbach (2002), firms with strong shareholder protection at home aimed to access U.S. investors by cross-listing while firms with weak shareholder protection in their own countries aimed at attracting more home investors through cross-listing.

If investor protection is the most important among all the valuation gains of Canadian firms' cross-listing, the Canadian market may not give the same reactions to firms' cross-listing in Europe. According to Rousseau (2007), Canadian stock exchange was stricter than AIM. The Canadian market had higher requirements on disclosure and corporate governance.

Based on the above analysis, investor protection may not be the biggest reason for Canadian firms to cross-list on European stock exchange markets. Canadian firms that choose to cross-list in Europe are trying to get easier access to capital markets in Europe. While the managers of the firms are trying to reach the investors of the world, the Canadian stock market may not be that interested in this business decision.

1.3 Need for the study

Testing the abnormal market return will show how markets value the decision of Canadian firms' cross-listing in the European market. The results of this paper could assist management in making cross-listing decisions.

1.4 Outline of Study

This paper tests the abnormal return following the announcement date of Canadian firms' cross-listing on a European stock exchange. While researchers may use either announcement date or effective date to analyze a cross-listing event, this paper chooses

the announcement date as the event date. According to Doukas and Switzer (2002), in an efficient market, the results of cross-listing were already reflected in stock return at the announcement date. Roosenboom and vanDijk (2009) used announcement date to test the short-term stock price reaction to cross-listing.

This research collected 64 cross-listing announcements made by Canadian firms. Forty percent of these events happened on London stock exchange while the others happened on other European stock exchanges. Sixty-four percent of these companies belong to the natural resource industry (oil and gas, mining). Most of these firms do business outside Canada. All these cross-listing announcements were made in the period 2001-2012.

In this paper, cumulative abnormal return is calculated and tested. A test for the difference between cross-listing reaction on London stock exchange and on continental Europe stock exchanges is investigated.

The rest of the paper will be organized as follows. Chapter 2 outlines related studies on cross-listing, mainly from the perspective of Canadian firms. Chapter 3 shows the methodology used in testing the Canadian market reaction. Event study is used to test abnormal market return. Dummy variable is used to test the difference between two cross-listing destinations. After stating the test results in Chapter 4, Chapter 5 gives the conclusions and recommendations of this paper based on the test results and analysis.

Chapter 2: Literature Review

This chapter has three sections reviewing the literature on Canadian firms' cross-listing. The first part discusses cross-listing in general, the motivation behind cross-listing and some studies of different factors of cross-listing. The second part focuses on cross-listing activities for Canadian firms in the world, especially in the U.S. The last part shows some studies between Canadian stock exchange and European stock exchanges which is helpful for the study of Canadian firms' cross-listing in Europe.

2.1 Cross-listing

2.1.1 Four Motivations

A lot of studies have shown positive market reaction to firms' cross-listing activities. Miller (1999) conducted an empirical test of 181 firms from 35 countries cross-listed on U.S. stock exchanges between 1985 and 1995 and found that abnormal returns exist around the announcement date. According to the author, cross-listing resulted in higher stock price and lower cost of capital. Roosenboom and van Dijk (2009), Bris, Cantale, Hrnjic and Nishiotis (2011), and Lee (1991) all discussed motivating factors for firms to cross-list: (i) reduced market segmentation means better marketability for better financing and acquisition activities, (ii) increased market liquidity through a larger investor/market base, (iii) improved investor recognition and market visibility, and (iv) enhanced credibility for better investor protection, especially the protection for minority shareholders' rights. The market visibility was also mentioned as signaling activity as

these firms had the confidence to provide more information to the market.

There are various studies conducted on the valuation effects of these four factors. Bris, Cantal and Nishiotis (2007) stated that it was difficult to separate the valuation effects of these four motivations and measure the importance of them. The authors used different proxies to measure market segmentation and liquidity. Under market segmentation, cross-listing could attract more investors in foreign markets which meant higher valuation of the firms' stocks. The results supported the liquidity argument and showed that market segmentation was the most important motivation for cross-listing in the sample period; the authors also stated that market segmentation had reduced in the 1990s. Although market segmentation and market liquidity were well known benefits of cross-listing activities, market reaction based on these factors had declined.

Baker, Nofsinger and Weaver (2002) discussed the impact cross-listing had on firms' market visibility, which is also known as the investor recognition of a firm. Higher investor recognition and easier access to foreign capital markets were the reasons given by managers for their cross-listing decisions. The authors used analyst coverage and media attention as proxies to show the market visibility of a firm. The paper tested 193 foreign firms that were cross-listed on the New York Stock Exchange (NYSE) and 210 foreign firms on the London Stock Exchange. The results in this paper showed significant higher investor recognition and lower cost of capital associated with cross-listing on

those two markets.

King and Segal (2004) investigated the bonding hypothesis by testing long-term

valuation gains for Canadian firms that were cross-listed in the U.S. The results showed

that only Canadian firms that were actively traded in the U.S. got higher firm valuation

gains compared with Canadian firms that were only listed on Canadian stock exchanges.

Reese and Weisbach (2002) stated that cross-listing in the U.S. provided legal protection

to shareholders which increased the firm value of the cross-listed firm and the firm's

ability to access external capital. According to King and Segal (2004), there existed both

legal bonding and reputational bonding in the bonding hypothesis. Legal bonding was

realized through the courts while reputational bonding was activated through the whole

market. The authors also suggested that reputational bonding should be the more

important.

Bris, Cantale, Hrnjic and Nishiotis (2011) separated these four factors into two categories.

Marketability and liquidity were considered as market-based benefits while investor

recognition and investor protection were considered as information-based benefits. The

authors tested the significance of these two kinds of cross-listing benefits by using the

unique Stock Exchange Automated Quotation International market (SEAQ-I) on the

London Stock Exchange. According to the authors, up until 2004, foreign companies

could be traded on SEAQ-I without the involvement of these companies. Firms that were

traded on this market could be viewed as only having the market-based benefits

compared with foreign firms that were officially listed on the London Stock Exchange.

The authors used an event study to do the test. Empirical test results showed significant

information-based benefits but insignificant market-based benefits.

2.1.2 Cross-listing Destinations

Other than the motivations for cross-listing, there are studies testing different aspects of

cross-listing. Roosenboom and van Dijk (2009) stated that the destination markets of

cross-listing did make a difference when a firm chose to cross-list. Their paper tested the

abnormal return for firms cross-listed on eight major stock exchange markets. The results

showed that cross-listing on stock exchange markets in the United States got the highest

abnormal return for firms. Cross-listing on London stock exchange also got relatively

high and significant abnormal return. More study on cross-listing in continental Europe

and Tokyo is still needed. Lee (1991) also stated that cross-listing on different

destinations got different market reactions. The paper tested the market reaction to U.S.

firms cross-listed on different stock exchanges and found different results. Miller's (1999)

test showed that even cross-listing on different stock exchanges in the U.S. made a

difference on abnormal return; the author's empirical test demonstrated that cross-listing

on major U.S. stock exchanges showed higher abnormal return than on other stock

exchanges in the U.S.

2.1.3 Emerging Markets and Developed Markets

Market reactions showed differences between firms from emerging markets and developed markets. Lins, Strickland and Zenner (2000) tested the influence cross-listing had on sensitivity of investment to cash flow. The authors used data in the 1986-1996 period. The results showed that firms from emerging markets showed a significant decrease in sensitivity of investment to cash flow. The authors checked the financial statements of the sample companies and determined that firms from emerging markets mentioned the need for external capital more frequently than firms from developed markets. As more information is disclosed through cross-listing, this reduces the information asymmetry of the firms and increases the firms' access to external capital. That was why cross-listing had greater benefit for firms with larger information asymmetry (Lins, Strickland and Zenner, 2000). Roosenboom and vanDijk (2009) tested 526 cross-listed firms from 44 countries. The results also showed that firms from emerging markets benefited more from cross-listing than firms from developed markets. However, Lins, Strickland and Zenner (2000) stated that the benefit gained by emerging markets through cross-listing would decline as the investor protection in these countries improved over time.

Bris, Cantale, Hrnjic and Nishiotis (2011) found that cross-listed firms from countries with higher accounting standards got lower abnormal return from cross-listing. Lins, Strickland and Zenner (2000) stated that firms from developed countries cross-listed for

other reasons such as higher level of market visibility and takeover opportunities.

2.1.4 U.S. Markets and U.S. Firms

Among all the stock exchanges in the world as the destinations of cross-listing, the stock

exchanges in United States attracted lots of firms to cross-list there. According to Reese

and Weisbach (2002), firms cross-listed in the U.S. to get higher investor protection

and/or more investors. Applying with U.S. GAAP, register with the SEC and following

certain stock market rules were some of the reasons why firms cross-listed in the U.S.

could offer better investor protection. The authors concluded that firms with weak

investor protection in their own countries seek the bonding effect in the U.S. market,

while firms with strong shareholder protection were trying to attract more investors in the

U.S. market.

There is also research on U.S. firms that choose to cross-list on other stock exchanges in

the world. Lau, Diltz and Apilado (1994) tested the U.S. market reaction to 108 firms

listed on 15 stock exchanges from 1962 to 1990. The U.S. market only showed positive

abnormal return around the cross-listing application acceptance date but negative

abnormal return in trading period after listing. The result did not show any influence on

return variance. On the other hand, Lee (1991) used data between 1962 and 1986, and

tested 141 U.S. firms listed on London Stock Exchange or Toronto Stock Exchange . The

author stated that there was no significant wealth loss, but the market gave different

reactions to U.S. firms cross-listed in different destinations.

2.1.5 Why Cross-listing

A comparison of these studies of U.S. firms' cross-listing and the studies of firms from other countries above showed that not all cross-listing got positive market reaction.

Doidge, Karolyi and Stulz (2002) gave another reason why firms choose to cross-list. According to this paper, firms that chose to cross-list in the U.S. had higher growth opportunities than other firms. Cross-listing in foreign countries, especially on U.S. stock exchanges, meant more information disclosure. Only firms with controlling shareholders who need low cost external capital to finance their growth opportunities would be willing to cross-list, since it meant accepting restraints on the firm's cash flow (Doidge, Karolyi and Stulz, 2002).

2.2 Canadian firms' cross-listing

Many Canadian firms choose to cross-list in the U.S. There are several different stock exchanges to choose in the U.S. Tests results of 224 Canadian firms investigated by Kryzanowski and Lazrak (2009) showed that there was no liquidity difference for cross-listing between different U.S. stock exchanges. The authors recommended that listing fees and market visibility should be the factors for firms to consider before they decided which U.S. stock exchange to cross-list on.

Doukas and Switzer (2000) used market reaction to cross-listing to test if there is market segmentation between Canada and the U.S. The author tested the short-term market reaction to Canadian firms cross-listed in the U.S. in the period between 1985 and 1996. The results showed positive abnormal return on the earliest cross-listing announcement date. The results also showed increased liquidity and investor recognition for the cross-listed firms. The authors stated that there still existed market segmentation between Canada and the U.S.

King and Segal (2004) used three groups of companies to test the bonding hypothesis of cross-listing. The authors tested Canadian firms' long-term valuation gains using 12-year data. There were several reasons why bonding hypothesis could be reflected in Canadian firms' cross-listing activities on U.S. stock exchanges: stricter supervision in the U.S.; a higher level of information asymmetry in Canadian firms; and more Canadian firms held by controlling shareholders, unlike most U.S. firms which were widely held. The results of this paper showed that only Canadian firms with high share turnover in the U.S. market got valuation gains in the long-run. Cross-listed Canadian firms which were not actively traded in the U.S. market were valued similarly as Canadian firms only listed in Canadian stock exchanges. Bonding hypothesis stated that firms' cross-listing got positive market reaction because the firms can offer better investor protection while operating in a market with higher standards. The test results of this paper showed that the

valuation gains of these Canadian firms were due to higher investor protection.

Under the bonding hypothesis, Canadian firms' cross-listing in stock exchanges that are not considered stricter than Canadian stock exchanges may not get positive market reaction.

2.3 Canadian and European stock exchanges

Canadian firms constituted one of the largest groups among international companies on London's AIM. "Canada takes aim" (2007) stated some trends that had been found about Canadian firms' listing on AIM. Some Canadian firms chose to be listed only on AIM instead of being dual-listed on both Canadian stock exchange and AIM. Some Canadian technology and natural resource firms chose to list on AIM before they went public on stock exchanges in North America. If a Canadian firm was only listed on AIM, it was not required to follow disclosure requirements in Canada. Listing on AIM had been viewed as training for Canadian firms' being a North American public company ("Canada takes aim," 2007).

There is some discussion about Canadian stock exchange markets and AIM of London Stock Exchange. Rousseau (2007) compared the Canadian stock exchanges' competitiveness with that of AIM. According to the paper, Canadian stock exchange was stricter on information disclosure and corporate governance requirements. On the

admission perspective, Canadian exchange was rule-based while AIM was

principle-based. The author suggested that while AIM had attracted many firms,

including some Canadian firms, Canadian stock exchanges may not be able to develop

the same system as AIM.

2.4 Summary

Research that has been done on market reactions to cross-listing activities showed that

many factors affected the market's valuation to cross-listing. Where the company came

from and which destination was chosen were the two main factors that made a difference.

To summarize, (i) firms from developed markets may not get as significantly positive

market reaction compared with firms from emerging markets; (ii) market value bonding

effect (higher investor protection) the highest among all the factors investigated.

The test of Canadian market reaction to cross-listing in Europe will show if the

conclusions of the literature review are also relevant in Canadian market. Based on the

literature review, the test of this paper has two bases (i) the Canadian market is defined as

a developed market; (ii) European stock exchanges may not offer better investor

protection than Canadian stock exchanges.

Chapter 3: Methodology

3.1 Sample Description

Bloomberg Terminal provided a list of Canadian firms that are multi-listed on both Canadian stock exchanges and European stock exchanges. The sample used in this paper contains 64 cross-listing announcements. Forty percent of these announcements were made on London stock exchange while the others were made on other European stock exchanges. Announcement dates are used as the event date assuming the Canadian market is efficient enough to capture all the information when announced. All of these cross-listing announcements were made in the period of 2001-2012.

A list of the companies in the sample is provided in Appendix A. Sixty-four percent of these companies are in the natural resource industry with 28% in oil and gas industry, 36% in mining industry. There are also companies in technology (22%), finance (8%), and media (6%). Over half of these companies do business worldwide, 67% of the firms have business in Europe (consider companies doing business worldwide have business in Europe). Of all the firms in the sample, only 17% of the firms state that they do not have more geographic expansion over their business in North America.

Announcement dates of cross-listing, daily stock prices of these Canadian firms and daily market index price were collected through Bloomberg Terminal.

Not that many data of European cross-listing were available as most of the Canadian

firms chose to cross-list in the U.S. Last price is used as the daily price of these Canadian

firms; some firms do not have last price in every trading day. One of the limitations in

data collecting is that some firms were listed earlier on the European stock exchanges

than their listing on the Canadian stock exchange. According to "Canada takes aim"

(2007), some Canadian firms in the technology and natural resource industries chose to

list on AIM before they went public in North America. No Canadian market reactions

could be showed in this kind occasion. Stata 11.0 is used to do data analysis. At least 60

daily prices before the event and 4 daily prices after the event are needed for the

construction of estimation window and event window; events with not enough data

collected will be ignored by the test.

3.2 Model Design

This paper tests how market reacted to the announcements of cross-listing on European

stock exchanges made by Canadian firms. An event study is used in this paper.

Cumulative abnormal return is the proxy to test if there were significant market reactions.

3.2.1 Estimation Window

An estimation window is set before the event date. The estimation window is viewed as a

period free of event. This period can be used to estimate the normal performance of these

companies. Use Capital Asset Pricing Model (CAPM) model to estimate how these

companies perform based on the performance of market index (which is the value of α_i

and β_i in the formula below).

$$R_i = \alpha_i + \beta_i R_m + \varepsilon_i \tag{1}$$

R_i is the return of the firms,

R_m is the return of the market,

ε_i is error term.

Use return of the S&P/TSX Composite Index as market return in the CAPM model. The

S&P/TSX Composite Index was the main index in the TSE and represented around 75%

of total market capitalization in Canada ("Canada Finance," 2012). Use a linear

regression to estimate α_i and β_i. This paper chose a 30-day event window which is

from 60 days before the announcement date to 31 days before the announcement date.

Expected return of the firms can be calculated using the coefficients got in this step.

3.2.2 Event Window

A nine-day event window is chosen as the period with the influence of the event. The

event window is from four days before the announcement date to four days after the

announcement date. Abnormal return of the firm is the difference between actual return

of the firm and the estimated return of the firm. The formula is showed below.

$$AR_i = R_i - \bar{R_i} \tag{2}$$

AR_i is abnormal return of the firm,

R_i is actual return in the event window,

$\bar{R}_\iota$ is the expected return.

Cumulative abnormal return is the sum of the abnormal returns in the event period.

$$CAR_i = \sum_{j=-4}^{4} AR_i \qquad (3)$$

CAR_i is the cumulative abnormal return of the firm.

3.3 Empirical Test

Cumulative abnormal return is viewed as the market reaction to Canadian firms' cross-listing. If there is positive cumulative abnormal return across all firms in the event window period, cross-listing increases firm value. If there is negative cumulative abnormal return in the event window period, cross-listing decreases firm value.

After testing the market reaction to Canadian firms' cross-listing on European stock exchanges, a dummy variable separating cross-listing on London stock exchange and others is added to test if cross-listing on London stock exchange had a difference.

Another dummy variable separating the difference between sample firms that have business in Europe and other companies is introduced to test if firms already had business in Europe will got a different market reaction in cross-listing.

Chapter 4: Results

4.1 Market Reaction

Running regression that has cumulative abnormal return as dependent value and no independent value will show test of cumulative abnormal return on average across all firms in the event window period. The test for cumulative abnormal return showed a negative value of -0.6719 (significant at 10% level). This means Canadian market gives a negative reaction to Canadian firms' cross-listing on European stock markets. However, this kind of reaction is only significant at the 10% significant level which is not convincing enough.

Based on this empirical test results and the literature review in chapter 2, Canadian stock markets do not take European stock markets as places to provide higher investor protection. On the other hand, cross-listing could be viewed as an activity reducing the value of the firms. The significance of this coefficient showed that Canadian market did not show big interest to Canadian firms' cross-listing activities in Europe.

Table 1 showed the test results of cumulative abnormal return in the event window period of cross-listing announcements.

Cumulative abnormal return	Coef.	s.d.	t	p
_cons	-0.6719*	0.3958	-1.70	0.098

*significant at 10% level

Table 1: Test Result of Cumulative Abnormal Return

4.2 Cross-listing in London

The test for cumulative abnormal return with listing on London stock exchange as dummy variable showed a negative market reaction of -1.0879 to cross-listing in Europe significant at 10% level, more significant than the value we get in 4.1. The coefficient of dummy variable of cross-listed in London is 0.8808, not significant.

Cross-listing on London stock exchange got better market reaction than cross-listing on other European stock exchanges. However market reaction to cross-listing on London stock exchange is still negative on average; the positive difference between listing in London and on other European stock exchanges is not significant.

Table 2 showed the test result of cumulative abnormal return with listing in London as dummy variable.

Cumulative abnormal return	Coef.	s.d.	t	p
london	0.8808	0.7901	1.11	0.273
_cons	-1.0879*	0.5429	-2.00	0.053

*significant at 10% level

Table 2: Test of Listing in London

4.3 Business in Europe

The test to show difference in market reaction to sample firms that already had a business expansion in Europe and other firms do not get significant results. Canadian market did not value firms that do business in Europe differently when they were trying to go cross-listing in Europe. Test of cumulative abnormal return with the two dummy variables together do not get significant results either.

Table 3 showed the test of cumulative abnormal return with doing business in Europe as dummy variable.

Cumulative abnormal return	Coef.	s.d.	t	p
busi_eu	-0.6129	0.8903	-0.69	0.496
_cons	-0.2293	0.7567	-0.30	0.764

Table 3: Test of Doing Business in Europe

Table 4 showed the test of cumulative abnormal return with listing in London and doing business in Europe as dummy variables.

Cumulative abnormal return	Coef.	s.d.	t	p
london	0.8628	0.7973	1.08	0.287
busi_eu	-0.5798	0.8887	-0.65	0.519
_cons	-0.6607	0.8536	-0.77	0.444

Table 4: Test of Both Dummy Variables

Empirical test results are provided in Appendix B.

Chapter 5: Conclusions and Recommendations

Canadian market gave a negative reaction to Canadian firms' cross-listing in Europe. This reaction is only significant at the 10% significant level across all firms. The significance get from the test showed that Canadian firms' cross-listing in Europe were not a big influence in the market. This test result shows accordance with the conclusion in literature view.

Based on the literature view in chapter 2, European stock exchanges could not provide better investor protection. That is why there would be little signaling or bonding benefits for Canadian firms to cross-list in Europe. Cross-listing in Europe can help Canadian firms to get larger investor base and higher liquidity. However, these market-based benefits might not be large enough to result in a positive market reaction.

One explanation for the negative market reaction is that, while a Canadian firm could cross-list on U.S. stock exchanges, if it chose to cross-list in Europe, Canadian market would take this kind of business decision as the company was not confident enough to cross-list in the U.S. This kind of cross-listing is a negative signal about the firms' corporate governance. Another explanation is that cross-listing in Europe might not be the final step of a Canadian firm's business decision. That is why there is no significant market reaction.

The test results of this paper proved that while there are many motivations mentioned by management when the firm chose to go cross-listing, bonding effect is most valued by Canadian market. This supported the study made by King and Segal (2004) which tested the relationship between bonding in U.S. market and long-term value of Canadian firms cross-listed in the U.S.

Cross-listing of Canadian firms in London got better market reaction than on other European stock exchanges. However this difference is not significant which does not support Roosenboom and van Dijk's (2009) study. Canadian market showed difference with other countries in valuing cross-listing in London. Roosenboom and van Dijk's (2009) study of cross-listing announcements of companies from 44 counties showed that cross-listing on stock exchanges in the U.S. and London got more positive market reaction than cross-listing on continental European stock exchanges.

While many firms became multi-national companies that do business worldwide, it is more reasonable for a firm doing business in Europe to cross-list on European stock exchanges. But the test result of this paper showed that whether Canadian companies do business in European or not did not make a difference when valuing its cross-listing in Europe.

The results showed that for a Canadian firm, market reaction should not be the most

important consideration when making cross-listing decisions. When comes to

cross-listing, a firm should make its decision based on its needs but not how the market

reacts.

As the destination of cross-listing still is very important in making a cross-listing decision,

if other benefits and costs are the same for cross-listing on different destinations, a

company should choose destinations like U.S. or London which will result in more

positive market reaction.

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Appendix A: List of Sample Companies

Firm Name	In UK	In EU	Industry
Antrim Energy Inc	7/30/2003	7/20/2005	Oil and gas
Bankers Petroleum Ltd	4/7/2005	5/23/2005	Oil and gas
Caledonia Mining Corp	6/27/2005	7/24/2002	Mining
Canaccord Financial Inc	6/22/2005	11/3/2005	Financial
Edge Resources Inc	7/5/2012	4/1/2010	Oil and gas
First Quantum Minerals Ltd	4/9/2001	3/2/2005	Mining
Intermap Technologies Corp	6/21/2006	5/31/2006	Technology
Kalimantan Gold Corp Ltd	12/13/2006	6/28/2010	Mining
Kirkland Lake Gold Inc	7/1/2004	10/15/2002	Mining
Mood Media Corp	9/13/2010	7/2/2008	Media
Nautilus Minerals Inc	2/2/2007	5/23/2006	Oil and gas
NeuLion Inc	8/10/2006	8/21/2006	Technology
Sanatana Resources Inc	7/28/2005	5/19/2006	Mining
Sandvine Corp	3/21/2006	3/21/2006	Technology
Transeuro Energy Corp	6/23/2009	6/18/2003	Oil and gas
Yamana Gold Inc	11/28/2003	4/28/2004	Mining
Caspian Energy Inc	9/21/2004	9/13/2004	Oil and gas
DragonWave Inc	4/19/2007	10/15/2009	Technology

Eastern Platinum Ltd	8/26/2005	6/28/2010	Mining
Eco Oro Minerals Corp	8/4/2004	6/2/2005	Mining
Genesis Worldwide Inc/Canada	7/3/2007	7/4/2007	Technology
Questerre Energy Corp	8/2/2010	6/17/2005	Oil and gas
Redline Communications Group I	12/5/2006	12/12/2006	Technology
Sprott Resource Lending Corp	2/16/2006	9/20/2005	Financing
Versatile Systems Inc	4/16/2007	4/12/2007	Technology
Aureus Mining Inc	4/13/2011	4/18/2011	Mining
Silanis International Ltd	6/26/2007	7/4/2007	Technology
CIC Mining Resources Ltd	11/1/2010	7/19/2007	Mining
Ithaca Energy Inc	N.A.	5/31/2006	Oil and gas
Barrick Gold Corp	N.A.	7/2/2003	Mining
Brookfield Asset Management In	N.A.	5/19/2004	Financing
Coastal Contacts Inc	N.A.	4/25/2006	Online retailer
Lundin Mining Corp	N.A.	2/18/2005	Mining
Petrobank Energy & Resources L	N.A.	7/24/2001	Oil and gas
American Rare Earths and Mater	N.A.	2/27/2004	Mining
Entertainment One Ltd	3/29/2007	N.A.	Media

Appendix B: Stata Output

B.1 Test for Cumulative Abnormal Return

```
.
. reg cumulative_abnormal_return if diff==0

      Source |       SS       df       MS              Number of obs =      36
-------------+------------------------------           F(  0,    35) =    0.00
       Model |          0        0         .            Prob > F      =       .
    Residual | 197.377276       35  5.63935074          R-squared     =  0.0000
-------------+------------------------------           Adj R-squared =  0.0000
       Total | 197.377276       35  5.63935074          Root MSE      =  2.3747

------------------------------------------------------------------------------
cumulative~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       _cons | -.6719411   .3957886    -1.70   0.098    -1.475435    .1315525
------------------------------------------------------------------------------
```

B.2 Test for Listing in London

```
. reg cumulative_abnormal_return london if diff==0

      Source |       SS       df       MS              Number of obs =      36
-------------+------------------------------           F(  1,    34) =    1.24
       Model | 6.96066639        1  6.96066639          Prob > F      =  0.2727
    Residual |  190.41661       34  5.60048852          R-squared     =  0.0353
-------------+------------------------------           Adj R-squared =  0.0069
       Total | 197.377276       35  5.63935074          Root MSE      =  2.3665

------------------------------------------------------------------------------
cumulative~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      london |  .8807961   .7900652     1.11   0.273    -.7248096    2.486402
       _cons | -1.087873   .5429204    -2.00   0.053     -2.19122    .0154744
------------------------------------------------------------------------------
```

B.3 Test for Doing Business in Europe

```
. reg cumulative_abnormal_return busi_eu if diff==0

      Source |       SS       df       MS              Number of obs =      36
-------------+------------------------------           F(  1,    34) =    0.47
       Model | 2.71341094        1  2.71341094          Prob > F      =  0.4959
    Residual | 194.663865       34  5.72540779          R-squared     =  0.0137
-------------+------------------------------           Adj R-squared = -0.0153
       Total | 197.377276       35  5.63935074          Root MSE      =  2.3928

------------------------------------------------------------------------------
cumulative~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     busi_eu | -.6129462   .8903644    -0.69   0.496    -2.422384    1.196492
       _cons | -.2292578   .7566642    -0.30   0.764    -1.766985    1.308469
------------------------------------------------------------------------------
```

B.4 Test for Both Dummy Variables

```
. reg cumulative_abnormal_return london busi_eu if diff==0

      Source |       SS       df       MS              Number of obs =      36
-------------+------------------------------           F(  2,    33) =    0.82
       Model |  9.3853193     2   4.69265965           Prob > F      =  0.4476
    Residual |  187.991957    33   5.69672596           R-squared     =  0.0476
-------------+------------------------------           Adj R-squared = -0.0102
       Total |  197.377276    35   5.63935074           Root MSE      =  2.3868

----------------------------------------------------------------------------------
cumulative~n |      Coef.   Std. Err.       t     P>|t|     [95% Conf. Interval]
-------------+--------------------------------------------------------------------
      london |   .8628469   .7972993     1.08     0.287    -.7592707    2.484965
     busi_eu |  -.5797598   .8886607    -0.65     0.519    -2.387754    1.228234
       _cons |  -.6606812   .8535773    -0.77     0.444    -2.397297    1.075935
----------------------------------------------------------------------------------
```