

# Mandatory adoption of IFRS and its effect on international stock listings in Canada

IFRS and its effect

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## Abstract

**Purpose** – The purpose of this study is to investigate if non-US/non-Canada (international) equity listings in the Canadian stock exchanges increased with the adoption of International Financial Reporting Standards (IFRS) in Canada. A question of interest is whether the adoption of common global accounting standards (IFRS) was beneficial in attracting international firms to the Canadian exchanges.

**Design/methodology/approach** – The authors use difference-in-difference ordinary least square methodology to conduct inter-country (between Canada and the USA) and intra-country (between the Toronto Stock Exchange [TSX] and the TSX Venture Exchange [TSXV]) tests to investigate whether there is increased listings of international firms on Canada's exchanges associated with mandatory adoption of IFRS in Canada compared to such listings in the American exchanges.

**Findings** – The authors did not find evidence of a relative increase in listings by international firms on the TSX and the TSXV after Canadian adoption of IFRS, but they did find that listings by international firms on the TSX, Canada's primary exchange, increased when the authors include the year before mandatory Canadian adoption as part of the IFRS adoption period. The authors also find that international listings from outside the North American, European and Australasian regions increased on the TSXV, consistent with IFRS adoption making the smaller Canadian exchange more attractive to listers from these regions.

**Originality/value** – With the increasing use of IFRS throughout the world, US regulators, the US Congress and other capital market participants seek to understand the costs and benefits of potential IFRS adoption in the USA. The authors contribute to this debate by examining the effect of Canada's adoption of IFRS on growth in international stock listings in the Canadian stock exchanges.

**Keywords** International financial reporting standards, Stock market, Accounting standards, Domestic listings, Equity listings, International listings

**Paper type** Research paper

## 1. Introduction

“And it is actually true, in some respects, that the Canadian environment [...] probably most resembles the situation that the U.S. is going to be in if it makes a similar kind of decision.” – Tricia O'Malley, Former Accounting Standards Board (AcSB) and International Accounting Standards Board (IASB) member, speaking of the Canadian decision to adopt IFRS.

With increasing use of International Financial Reporting Standards (IFRS) throughout the world, US regulators, the US Congress and other capital market participants seek to understand the costs and benefits of potential IFRS adoption in the USA. We contribute to this debate by examining the effect of Canada's adoption of IFRS on growth in international stock listings in the Canadian stock exchanges. Canada adopted IFRS in 2011, more recently than other countries studied in prior IFRS literature. We investigate whether there is increased listing of international firms on Canada's exchanges, the Toronto Stock Exchange (TSX) and the TSX Venture Exchange (TSXV), associated with mandatory adoption of IFRS in Canada, compared to such listings in our control group (without IFRS) that includes the US's two primary exchanges, the New York Stock Exchange (NYSE) and the National



Association of Securities Dealers Exchange (NASDAQ). We do not find evidence of a relative increase in listings by international firms on the TSX and the TSXV after Canadian adoption of IFRS, but we do find that listings by international firms on the TSX, Canada's primary exchange, increased when we include the year before mandatory Canadian adoption as part of the IFRS adoption period. We also find that international listings from outside the North American, European and Australasian regions increased on the TSXV, consistent with IFRS adoption making the smaller Canadian exchange more attractive to listers from these regions.

We believe that IFRS adoption in Canada provides a useful natural experiment to evaluate the possible impact of IFRS on international listing in the US stock exchanges for the following reasons. Prior to IFRS adoption, Canadian generally accepted accounting principles (GAAP) were considered a near "twin" to US GAAP (Burnett *et al.*, 2015; Webster and Thornton, 2005; Bandyopadhyay *et al.*, 1994)[1]. Canada's culture, political environment, regulatory strength, legal/economic institutions and stability are more similar to those in the USA than any other country in the world[2]. Furthermore, Canada is tied to the USA both geographically and economically – the countries share the longest border in the world, and Canada is the USA's largest trading partner.

"In contrast to continental Europe, Canada has a legal and regulatory regime that is much closer to the USA. Hence, an analysis of IFRS in that context is likely to provide more salient evidence." Cormier and Magnan (2016).

Our study adds to the IFRS listings literature by investigating IFRS implementation in a single country, compared to previous studies that examined multi-country implementation (Han and He, 2011; Chen *et al.*, 2015). Limiting our test to Canada controls for many contemporaneous macro-economic factors that are difficult to control in inter-country tests which involves many countries. Previous studies document an increase in international listings or other capital market benefits in the post-IFRS adoption period based largely on the evidence of European adoptions of IFRS (Daske *et al.*, 2008; Landsman *et al.*, 2012; Han and He, 2011; Chen *et al.*, 2015). Canada adopted IFRS in 2011 in relative isolation because most of the jurisdictions in Europe and Asia had already adopted IFRS (Khan *et al.*, 2019). De George *et al.* (2016) argue that it is highly likely that many countries that adopted IFRS experienced greater listings or other capital market benefits because of contemporaneous increases in enforcement (e.g. better auditing standards), rather than solely from their adoption of IFRS. Recently, opposite to their expectations, Krishnan and Zhang (2019) show that Canadian GAAP is associated with higher earnings quality than with IFRS.[AQ5] Also, Khan *et al.* (2019) show that Canadian firms did not benefit from greater international institutional investment in the post-IFRS adoption period.

Previous literature provides multiple reasons why international listings would increase after the adoption of IFRS (Chen *et al.*, 2015; Wang and Wu, 2019). Specifically, use of IFRS may increase the quantity and quality of disclosures and financial information provided, and its common use results increased comparability of financial statements across countries (Ashbaugh and Pincus, 2001; Hong *et al.*, 2014; Florou and Pope, 2012; DeFond *et al.*, 2011; Wang and Wu, 2019). This reduces the disclosure cost concerns for international firms wishing to list or cross-list to increase the attractiveness of their firms to foreign investors.

Many previous IFRS studies have documented that IFRS adoption is associated with capital markets benefits (e.g. higher liquidity, greater information quality, lower cost of capital, greater institutional investment and higher analyst coverage) (Daske *et al.*, 2008; Landsman *et al.*, 2012; Han and He, 2011; Chen *et al.*, 2015; Wang and Wu, 2019). With such

advances in capital markets around the world after IFRS adoption, international firms may find improved local and regional stock markets through which to raise capital, reducing the need to list in foreign countries. Thus, by 2011 when Canada adopted IFRS, would-be international listers had a larger menu of international destinations in which to cross-list. Hence, *a priori*, it is not clear if Canadian stock markets would benefit from higher international listings after its adoption of IFRS. Consequently, only empirical testing can provide more insights.

We use difference-in-difference ordinary least square methodology applied previously by [Chen et al. \(2015\)](#). Our findings in inter-country (between Canada and the USA) tests indicate that the TSX and the TSXV did not experience increased international listing (from non-USA/non-Canada firms) relative to growth in international listing in the US stock exchanges in the post-IFRS adoption period. However, when we define the IFRS adoption period as beginning one year before the mandatory reporting year, our study finds a significant increase in international listings in the TSX, Canada's primary exchange, relative to such listings in the comparable US markets. We find similar results when we compare international listings in the TSX with international listings in the Australian Securities Exchange (ASX). Apparently, international firms that perceived benefits from listing their stocks in the TSX began their Canadian listing before the mandatory IFRS adoption period, given that they had prior information about Canada's IFRS adoption date.

We also take advantage of Canada's unique situation regarding its two national stock exchanges. Different from many developed countries, Canada has both a successful junior stock exchange, the TSX Venture (TSXV) and a successful senior exchange, the TSX ([Pandes and Robinson, 2013](#)). Listings requirements are less stringent in the TSXV compared to those in the TSX. Thus, smaller and medium-sized firms list their stocks on the TSXV, compared to the larger and more mature firms in the TSX.

The TSXV is likely to attract a different type of international listers than the TSX because investor appetites for risk vary across the two markets. Besides the USA, Canada has historically had strong social and economic relations with the Europe and Australia regions owing to its European and British Commonwealth heritage. This suggests that communication concerns associated with financial reporting by smaller companies are likely to be particularly acute for companies from other regions of the world before IFRS adoption in Canada. Canadian adoption of IFRS may be especially meaningful to companies from less developed countries that may list on the TSXV.

In addition to our inter-country test between senior exchanges of Canada and the USA described earlier, we also conduct an intra-country (between the TSX and the TSXV) test that investigates if the adoption of IFRS attracted listings for smaller international firms in the TSXV from countries outside the North American, European and Australasian regions relative to the growth in such listings in the TSX. Our intra-exchange test within Canada further controls for many contemporaneous macro-economic factors that are difficult to control in inter-country tests between Canada and the USA. We find that the smaller, more local TSXV benefitted from a significantly greater increase in international listings from outside the North American, European and Australasian regions in the post-IFRS adoption period compared to growth in such listings in the TSX.

Section 2 provides a literature review and develops our hypotheses. In Section 3, we discuss the research design, the statistical models and the sample data. Section 4 provides the descriptive statistics, presents the univariate and then the multivariate results, and describes additional robustness tests. Finally, Section 5 concludes the study.

## 2. Literature review and Hypotheses

### 2.1 Literature review

Cultivating international listings on a stock exchange is important to the development of a strong capital market, which is why attracting international listings is normally a top priority for any stock exchange (Eun and Sabherwal, 2003). International cross-listed firms in major exchanges typically enjoy greater analyst and media coverage, higher price discovery and greater visibility (Lang *et al.*, 2003, 2004; Bailey *et al.*, 2006). Thus an increased presence of international firms in the Canadian stock exchanges in the post-IFRS adoption period would signify a notable benefit to Canada resulting from mandatory IFRS adoption.

Chen *et al.* (2015) investigate the impact of mandatory IFRS adoption on firms' cross-listing activities. They find evidence that mandatory adoption facilitates cross-listing activities among firms, and that firms from countries that mandated IFRS adoption are more likely to cross-list their securities in mandatory IFRS adoption countries and countries with larger and more liquid capital markets. Chen *et al.* (2015) use a propensity-score method to investigate the cross-listing behavior of firms in both inward and outward directions of mostly European countries that mandated IFRS adoption around 2005. European adoption of IFRS was a major global event that involved a rare IFRS adoption by a large group of European Union member nations, joined by other countries from Asia. In contrast to Chen *et al.*'s (2015) study, our analysis looks at the inward direction of international stock listing in a setting of two powerful economies, Canada and the USA, which are regionally interconnected but differ in this respect: Canada adopted IFRS, whereas the USA did not.

Similarly, Han and He (2011) investigate the impact of IFRS adoption on overall stock exchange listings, both domestic and international, in 13 countries and find that listings increase when IFRS becomes effective. Their sample includes data from 2000 to 2008, and they use World Exchanges' data, which also includes non-equity securities in total listings on each stock exchange. Our paper investigates the impact of IFRS on international listings (non-USA/non-Canada) in the primary Canadian exchange, TSX, and compares them with international listings in two US exchanges, NYSE and NASDAQ, in a more stable experimental setting. Both countries have high-quality accounting and reputable economic and political institutions, both before and after the adoption of IFRS. Our sample data from the FactSet database and the TMX Group's website[3], for the USA and Canada, respectively, consists of monthly listings data from 2008 to 2013 and avoids secondary and non-equity securities' listings on the stock exchanges.

Biddle and Saudagaran (1989) and Saudagaran and Biddle (1992) find that international companies avoid cross-listing because of prohibitively high costs related to stringent disclosure requirements. According to a survey conducted by Bancel and Mittoo (2001), companies place stringent disclosure requirements among the chief disadvantages of cross-listing decisions. Listing costs are also a significant concern in Canada as most of the Initial Public Offerings (IPOs) are generally smaller in size (smaller companies) than those in the USA (Carpentier and Suret, 2018). Smaller firms that cross-list in public markets proportionately face higher accounting costs than larger firms do. One of the principle reasons that Canadian regulators favored IFRS and rejected US GAAP as the main set of accounting standards in Canada in 2011 was the high costs that smaller firms would face in following the more stringent Securities and Exchange Commission's (SEC) regulatory requirements under US GAAP[4]. Hence, international firms would find a more favorable environment to list their stocks in the TSX and the TSXV once IFRS was adopted in Canada, as they would be facing lower accounting costs related to listing in the Canadian markets.

There are a number of papers that investigate capital market effects because of the adoption of IFRS. A few studies look at the change in cross-border investments as a result of IFRS adoption. [DeFond et al. \(2011\)](#) investigate the impact of IFRS adoption on European countries' mutual fund investments based on arguments of greater comparability between industry peers across countries where IFRS implementation was credible, which is likely to lower transaction costs for these investors. They find greater investment in countries where IFRS results in greater comparability. [Brüggemann et al. \(2010\)](#) examine the impact of IFRS adoption on individual investors and find that individuals increase their cross-border investments in the post-IFRS period. [Florou and Pope \(2012\)](#) investigate the impact on institutional investors' holdings as a result of mandatory IFRS adoption and find greater institutional holdings for IFRS adopting countries. They find that the effect is stronger among active investors who use accounting information to make investment decisions. [Beneish et al. \(2015\)](#) explore the impact on foreign investment in both the equity and debt markets around 2005 when many countries adopted IFRS. They find that there was greater foreign investment in debt markets than equity markets at the time, consistent with the notion that debt investors are greater consumers of accounting information.

Generally, these studies find positive effects of IFRS in terms of increased cross-border investment. With such advances in capital markets around the world after IFRS adoption, international firms may find improved local and regional stock markets through which to raise capital, reducing the need to list in foreign countries ([Chen et al., 2015](#)). These previous IFRS studies primarily use European data where simultaneous changes in other institutions (e.g. greater enforcement when IFRS was adopted) might be driving increased cross-border investment, rather than the IFRS adoption alone ([De George et al., 2016](#)). More recent studies find that capital market benefits are weak after the adoption of IFRS in Canadian stock markets ([Khan et al., 2019](#); [Krishnan and Zhang, 2019](#)). Hence, we investigate changes in international listings in the Canadian stock markets, TSX and TSXV.

## 2.2 Hypothesis development

Prior studies have shown that local investors avoid acquiring foreign firms' stock because of higher costs of acquiring and processing information about those foreign firms ([Kang and Stulz, 1997](#); [Lundholm et al., 2014](#); [Hong et al., 2014](#)). In the post-IFRS adoption period in Canada, both Canadian and international firms would be producing financial statements under common IFRS. Thus, mandatory IFRS adoption in Canada means that local investors would make a greater effort to become skilled in analyzing IFRS financial statements. Adoption of IFRS may increase the quantity and quality of financial information disclosures and should increase comparability of financial statements across countries ([Ashbaugh and Pincus, 2001](#); [Hong et al., 2014](#); [Florou and Pope, 2012](#); [DeFond et al., 2011](#)). This reduces the disclosure cost concerns for international firms wishing to cross-list and/or increases the attractiveness of their firms to foreign investors. Hence, IFRS adoption should lead to a reduction in Canadian investors' bias to focus mostly on domestic companies reporting under Canadian GAAP or US companies reporting under US GAAP, making the Canadian markets more appealing to international companies. Hence, we form the following hypothesis:

- H1.* There would be higher growth in international listings in the Canadian stock markets, the TSX and the TSXV, after the adoption of IFRS in comparison to the US stock markets, the NYSE and the NASDAQ during the same time period.

Canada has well-functioning stock markets at both the senior and junior levels ([Pandés and Robinson, 2013](#)). These two exchanges in Canada differ in terms of their information



environments (Khan *et al.*, 2015): the TSX has more stringent listing requirements and facilitates trading for larger and more established firms that analysts and the media frequently cover, whereas the TSXV has less stringent listing requirements and its firms are generally smaller in size, growth-oriented and less covered by analysts or the media. There is a large institutional investors' presence in the TSX, whereas there is a strong retail investors' presence in the TSXV (Khan *et al.*, 2015; Pandes and Robinson, 2013). Hence, there may be a differential impact of IFRS with respect to international listing by larger firms in the TSX and smaller firms in the TSXV.

Local retail investors trading in the TSXV generally have limited resources compared to larger institutional investors in the TSX. Retail investors in the TSXV are likely to avoid acquiring foreign firms' stock because of the high costs of acquiring and processing information about small international firms, especially if the international firms under consideration are from unfamiliar territories (Kang and Stulz, 1997; Lundholm *et al.*, 2014; Hong *et al.*, 2014). Thus, IFRS may have a greater impact for international firms in terms of reducing the disclosure cost concerns of retail investors in the TSXV. This makes sense if smaller retail investors rely more on financial accounting information as they are less likely to acquire financial information from sources other than financial accounting statements (Ball, 2006).

On the other hand, these smaller entrepreneurial firms in the TSXV also face a greater burden in terms of costs when going public, especially if the economic, political, legal and regulatory institutional setups in their home countries are different from Canada. This suggests that communication concerns associated with financial reporting by smaller companies are likely to be particularly acute for companies from outside the North American, European and Australasian regions of the world before IFRS adoption in Canada. Besides the USA, Canada has historically had strong social and economic relations with the European and Australasian regions owing to its European and British Commonwealth heritage. Moreover, capital for such small firms is scarce as investors face a high degree of information asymmetry with these companies in the early stages of development. The TSXV successfully provides a low-cost listing environment for such firms and is one of the world's largest public markets for development-oriented, early-stage firms (Pandes and Robinson, 2013). With the adoption of IFRS in Canada, smaller international firms may find it more attractive to list in the TSXV because of lower information processing costs. Hence, we examine whether listings from outside the North American, European and Australasian regions of the world in the TSXV versus TSX increased more after the adoption of IFRS in Canada, leading to our second hypothesis:

- H2. Listings for international firms from outside the North American, European and Australasian regions around the adoption of IFRS increased relatively more in the TSXV than those in the TSX.

### 3. Research design and data

In our inter-country test, we investigate the change in international equity listings (IEL) for the Canadian exchanges, the TSX and the TSXV relative to the change in IEL for two primary US exchanges, the NYSE and the NASDAQ between the pre-IFRS and post-IFRS periods in Canada. For the purpose of testing our hypothesis, we code two dummy variables: *POST*, which represents the relevant period of interest and is coded 1 in the post-IFRS adoption period and 0 otherwise; and *CANADA*, which is the treatment group and is coded 1 for the Canadian exchanges and 0 for the US exchanges (our control group). The main variable that captures the change in IEL is the interaction term, *POST*  $\times$  *CANADA*, which

captures the incremental effect for the Canadian exchanges in terms of change in IEL relative to the change in IEL for the US exchanges between the pre-IFRS and post-IFRS periods in Canada. The coefficient for interaction term,  $POST \times CANADA$ , is predicted to be positive under  $H1$ , indicating that IEL would increase more in the Canadian exchanges in the post-IFRS periods relative to IEL in the US exchanges after controlling for other factors that may affect the level of IEL.

Following the previous literature (La Porta *et al.*, 2006), we estimate the following regression model for the TSX and the TSXV samples with the dependent variable (the number of international listings divided by the number of domestic listings) representing the relative magnitude of international listings in the exchange and including exchange-level and country-level control variables[5]:

$$\begin{aligned} INT\_LIST\_DOM\_LIST_{it} = & \beta_0 + \beta_1 POST_{it} + \beta_2 CANADA_{it} \\ & + \beta_3 (POST \times CANADA)_{it} + \beta_4 GDP\_PER\_CAPITA_{it} \\ & + \beta_5 TRADE\_VOLUME_{it} + \beta_6 CRISIS_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

The dependent variable (the number of international listings each month divided by the number of domestic listings each month) by exchange is identified as  $INT\_LIST\_DOM\_LIST$ . The variable  $POST$  represents the relevant period of interest and is coded 1 for all monthly observations from 2011 to 2013 (the post-IFRS adoption period) and 0 for all monthly observations from 2008 to 2010 (the pre-IFRS adoption period). The sample starts in 2008 because the TMX Group's website monthly listings data for Canada (by exchange) is available from 2008 onwards[6]. The variable  $GDP\_PER\_CAPITA$  is the log of gross domestic product (GDP) in US dollars per quarter divided by the population. The variable  $TRADE\_VOLUME$  is a ratio of the trading volume in each month in the exchange to GDP each month. The variable  $CRISIS$  is a dummy variable coded as 1 for the period of January 2008-June 2009 and 0 otherwise. This variable controls for the downward trend in international listings because of the impact of the global financial crisis in 2008 and 2009. Our control variables are thus  $GDP\_PER\_CAPITA$ ,  $TRADE\_VOLUME$  and  $CRISIS$ .

In our intra-country tests, we investigate the change in IEL for the TSXV, relative to the change in IEL for the TSX between the pre-IFRS and post-IFRS periods in Canada. We further refine the definition of IEL to include international firms from outside the North American, European and Australasian regions. For this purpose, we use the Market Intelligence Group (MiG) Archives available on the TMX Group website[7], which defines the European region as firms from the European continent and the Australasian region as strictly including countries such as Australia, New Zealand and Papua New Guinea. For the purpose of testing  $H2$ , we code two dummy variables:  $POST$ , which is coded 1 in the post-IFRS adoption period and 0 otherwise; and  $EXCHANGE$ , which is coded 1 for the TSXV (experimental group) and 0 for the TSX (control group). The main variable of interest that captures the change in IEL is the interaction term,  $POST \times EXCHANGE$ , for the TSXV, in terms of the change in IEL relative to the change in IEL for the TSX between the pre-IFRS and post-IFRS periods in Canada. The coefficient for the interaction term,  $POST \times EXCHANGE$ , is predicted to be positive under  $H2$ , that IEL from outside the North American, European and Australasian regions would increase more in the TSXV exchange in the post-IFRS periods relative to such IEL listings in the TSX after controlling for other factors that may affect the level of IEL. We use similar control variables in our intra-country test as in our inter-country test.

Following previous literature (La Porta *et al.*, 2006), we estimate the following regression model for the TSXV sample. In this regression, the dependent variable (the number of international listings divided by the number of domestic listings) represents the economic magnitude of international listings from outside the North American, European and Australasian regions in the exchange and controls for exchange-level control variables:

$$\begin{aligned} INT\_LIST\_DOM\_LIST_{it} = & \beta_0 + \beta_1 POST_{it} + \beta_2 EXCHANGE_{it} \\ & + \beta_3 (POST \times EXCHANGE)_{it} + \beta_4 GDP\_PER\_CAPITA_{it} \\ & + \beta_5 TRADE\_VOLUME_{it} + \beta_6 CRISIS_{it} + \varepsilon_{it} \end{aligned} \quad (2)$$

We collect listings data for the US stock exchanges from the FactSet database, which provides monthly listings information about all securities representing domestic and international firms. We hand-collect listings data for the Canadian exchanges using the MiG Archives available on the TMX Group website[8]. There is limited data availability for Canadian capital markets with large database companies such as FactSet. We define international firms using the company's headquarter information. If a listing company's headquarter is in the same country as where the exchange is located, then it is considered a domestic firm. We follow additional procedures to obtain the listings data for the purpose of our analysis. We include inactive securities to avoid survival bias in our results. Moreover, we exclude non-equity securities, which include indices, mutual funds and exchange-traded funds. Their inclusion was a problem in a previous listings study (Han and He, 2011); their sample includes non-equity securities in total listings on each stock exchange. We obtain trading volume data from the World Exchanges' database and other macro-economic data from the Economic dataset of the FactSet database. To make proper comparison in our inter-country test (between Canada and the USA), this paper excludes Canadian firms listed in USA when measuring international listings in US exchanges. We carefully followed similar procedures in all our tests to make sure that our sample is comparable in both our experimental and control groups.

Our experimental group in our inter-country tests includes international firms (non-USA/non-Canada) on the TSX and the TSXV, and our control group includes similar firms (non-Canada/non-USA) on the NYSE and NASDAQ for the US sample. We collect monthly listings data from the calendar years of 2008 through 2010 for international and domestic listings for the pre-IFRS adoption period. Similarly, for the post-IFRS adoption period, we collect monthly data for the international and domestic listings from the calendar years of 2011 through 2013. This results in a total of 288 monthly observations for our inter-country tests, including both the Canadian and the US samples. Our experimental group in our intra-country tests includes international firms (outside the North American, European and Australasian regions) on the TSXV, and our control group includes similar firms (outside the North American, European and Australasian regions) on the TSX. For our intra-country tests within Canada, the sample is also comprised of 144 monthly observations, including both the TSX and TSXV samples.

#### 4. Results

The correlation matrix for the dependent and independent variables is provided in Table I. We do not find sufficiently high correlations between any two independent variables to indicate an issue about multi-collinearity.



Table I.  
Correlations

	1.	2.	3.	4.	5.	6.
1. INT_LIST_DOM_LIST	1.00					
2. POST	0.23*	1.00				
3. CANADA	-0.84*	0.00	1.00			
4. CRISIS	-0.21*	-0.57*	0.00	1.00		
5. TRADE_VOLUME	0.51*	-0.29*	-0.74*	0.38*	1.00	
6. GDP_PER_CAPITA	0.85*	0.02	-0.99*	-0.01	0.73*	1.00

**Notes:** \*If  $p$ -value (one-tailed) is  $<0.10$ ; \*\*if  $p$ -value (one-tailed) is  $<0.05$ ; and \*\*\*if  $p$ -value (one-tailed) is  $<0.01$ . INT\_LIST\_DOM\_LIST stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. POST is a dummy variable coded 1 for all years from 2011 to 2013 (the post-IFRS adoption period) and 0 for all years from 2008 to 2010. CANADA is coded 1 for the TSX and the TSXV and 0 for the US exchanges. CRISIS is a dummy variable coded as 1 from January 2008 to June 2009 and 0 otherwise. TRADE\_VOLUME is a ratio of the trading volume each month in the exchange to GDP each month. GDP\_PER\_CAPITA is the log of GDP in US dollars per quarter divided by the population

#### 4.1 Univariate analysis

Table II shows the mean and median summary statistics of all variables in the pre-IFRS and post-IFRS adoption periods. For the TSX (Panel 2A), the mean (median) international listings represented by the *INT\_LIST\_DOM\_LIST* variable increase significantly ( $p < 0.01$ ), from 0.06 (0.06) in the pre-IFRS adoption period to 0.07 (0.07) in the post-IFRS adoption period. For the TSXV (Panel 2B), there is no noticeable increase in the mean (median) international listings, but the incremental change is statistically significant ( $p < 0.01$ ), from 0.03 (0.03) in the pre-IFRS adoption period to 0.03 (0.03) in the post-IFRS adoption period.

For the NYSE (Panel 2C), the mean (median) international listings increase significantly ( $p < 0.01$ ) from 0.09 (0.08) in the pre-IFRS adoption period to 0.11 (0.11) in the post-IFRS adoption period. For the NASDAQ (Panel 2D), the mean (median) international listings increase significantly ( $p < 0.01$ ) from 0.09 (0.09) in the pre-IFRS adoption period to 0.10 (0.10) in the post-IFRS adoption period. For the TSXV (Panel 2E), the mean (median) international listings from outside the North American, European and Australasian regions increase significantly ( $p < 0.01$ ) from 0.02 (0.02) in the pre-IFRS adoption period to 0.03 (0.02) in the post-IFRS adoption period. Overall, these results indicate that the international listings increase significantly in the post-IFRS adoption period for both the Canadian and US exchanges.

Because of limitations of univariate tests, we perform difference-in-difference multivariate tests to draw conclusions about the relative changes between the Canadian and US exchanges between the pre- and post-IFRS periods. For instance, the *POST* period coincides with the post-global financial crisis period. It is plausible that international firms were withholding their listing decisions in the US exchanges until after the global financial crisis; thus, we may be seeing this incremental effect on international listings in the USA. We include a control for the financial crisis in our multivariate tests.

#### 4.2 Multivariate analysis

In Table III, which covers our main difference-in-difference regression for our inter-country test, the estimated coefficient on the *CANADA* variable is significantly positive (coefficient = 0.103,  $p < 0.01$ ), indicating that, on average, international listings make up a higher portion of firms for the TSX and TSXV than the NYSE and NASDAQ exchanges. This is consistent with the idea that Canada enjoys a reputation as a global economic player

Variable	N	Prior to IFRS adoption		Post-IFRS adoption		Difference	
		Mean	Median	Mean	Median	Diff. Mean	Diff. Median
<i>Panel A: All TSX observations</i>							
INT_LIST_DOM_LIST	72	0.06	0.06	0.07	0.07	0.01***	0.01***
TRADING_VOLUME	72	0.08	0.07	0.07	0.07	-0.01**	0.00
GDP_PER_CAPITA	72	14.28	14.29	14.34	14.34	0.06***	0.05***
<i>Panel B: All TSXV observations</i>							
INT_LIST_DOM_LIST	72	0.03	0.03	0.03	0.03	0.00***	0.00***
TRADING_VOLUME	72	0.08	0.07	0.07	0.07	-0.01**	0.00
GDP_PER_CAPITA	72	14.28	14.29	14.34	14.34	0.06***	0.05***
<i>Panel C: All NYSE observations</i>							
INT_LIST_DOM_LIST	72	0.09	0.08	0.11	0.11	0.02***	0.03***
TRADE_VOLUME	72	0.20	0.18	0.13	0.13	-0.07***	-0.05***
GDP_PER_CAPITA	72	16.55	16.56	16.60	16.60	0.05***	0.04***
<i>Panel D: All NASDAQ observations</i>							
INT_LIST_DOM_LIST	72	0.09	0.09	0.10	0.10	0.01***	0.01***
TRADING_VOLUME	72	0.20	0.18	0.13	0.13	-0.07***	-0.05***
GDP_PER_CAPITA	72	16.55	16.56	16.60	16.60	0.05***	0.04***
<i>Panel E: All TSXV observations (outside the North American, European and Australasian regions)</i>							
INT_LIST_DOM_LIST	72	0.02	0.02	0.03	0.02	0.01***	0.01***
TRADING_VOLUME	72	0.08	0.07	0.07	0.07	0.01**	0.00
GDP_PER_CAPITA	72	14.28	14.29	14.34	14.34	0.06***	0.05***

**Notes:** In Panel A: \*If  $p$ -value (one-tailed) is  $<0.10$ , \*\*if  $p$ -value (one-tailed) is  $<0.05$ ; and \*\*\*if  $p$ -value (one-tailed) is  $<0.01$ . The pre-IFRS adoption period consists of monthly observations from 2008 to 2010, and the post-IFRS adoption period is from 2011 to 2013. *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from non-Canada/non-US countries. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population. In Panel B: \*If  $p$ -value (one-tailed) is  $<0.10$ , \*\*if  $p$ -value (one-tailed) is  $<0.05$ , and \*\*\*if  $p$ -value (one-tailed) is  $<0.01$ . The pre-IFRS adoption period consists of monthly observations from 2008 to 2010, and the post-IFRS adoption period is from 2011 to 2013. *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from non-Canada/non-US countries. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population. In Panel C: \*If  $p$ -value (one-tailed) is  $<0.10$ , \*\*if  $p$ -value (one-tailed) is  $<0.05$  and \*\*\*if  $p$ -value (one-tailed) is  $<0.01$ . The pre-IFRS adoption period consists of monthly observations from 2008 to 2010, and the post-IFRS adoption period is from 2011 to 2013. *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from non-Canada/non-US countries. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population. In Panel D: \*if  $p$ -value (one-tailed) is  $<0.10$ , \*\*if  $p$ -value (one-tailed) is  $<0.05$ , and \*\*\*if  $p$ -value (one-tailed) is  $<0.01$ . The pre-IFRS adoption period consists of monthly observations from 2008 to 2010, and the post-IFRS adoption period is from 2011 to 2013. *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from non-Canada/non-US countries. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population. In Panel E: \*If  $p$ -value (one-tailed) is  $<0.10$ , \*\*if  $p$ -value (one-tailed) is  $<0.05$  and \*\*\*if  $p$ -value (one-tailed) is  $<0.01$ . The pre-IFRS adoption period consists of monthly observations from 2008 to 2010, and the post-IFRS adoption period is from 2011 to 2013. *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from outside the North American, European and Australasian regions. Please also note that we do not write non-Canada when we define international firms as Canadian firms are part of domestic firms. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population

**Table II.**  
Descriptive statistics

Variables	Pred. Sign	Ilistings/Domestic listings (INT_LIST_DOM_LIST)	
		Coefficient	t-stats
Intercept	?	-0.84	-3.81***
POST	?	0.010	10.58***
CANADA	?	0.103	3.38***
POST x CANADA	+	-0.008	-8.20***
GDP_PER_CAPITA	+	0.056	4.22***
TRADING_VOLUME	+	-0.001	-0.17
CRISIS	-	-0.007	-10.71***
Adjusted $R^2$		0.9828	
Number of observations		288	

**Notes:** \*If  $p$ -value (one-tailed) is  $<0.10$ ; \*\*if  $p$ -value (one-tailed) is  $<0.05$ ; and \*\*\*if  $p$ -value (one-tailed) is  $<0.01$ . The pre-IFRS adoption period consists of monthly observations from 2008 to 2010, and the post-IFRS adoption period is from 2011 to 2013. *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from non-Canada/non-US countries. *POST* is a dummy variable coded 1 for all years from 2011 to 2013 (the post-IFRS adoption period) and 0 for all years from 2008 to 2010. *CANADA* is coded 1 for the TSX and the TSXV and 0 for the NYSE and NASDAQ. *POST x CANADA* captures the incremental effect for the TSX and TSXV in terms of change in international listings relative to the change in international listings for the NYSE and NASDAQ between the pre-IFRS and post-IFRS periods in Canada. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *CRISIS* is a dummy variable coded as 1 from January 2008 to June 2009 and 0 otherwise

**Table III.**  
Multivariate regression of international listings in Canada vs USA where 2008 to 2010 is pre- and 2011 to 2013 is post-IFRS adoption period (three years vs three years)

not only with the USA but also with the non-USA international world as there are many smaller and medium-sized international firms that list on the Canadian exchanges. On the other hand, US exchanges are known for more stringent SEC regulatory requirements for listers and are more attractive to larger international firms. The estimated coefficient on the *POST* variable is significantly positive (coefficient 0.010,  $p < 0.01$ ), indicating that the USA and Canadian exchanges, in general, experienced increases in international listings in the post-IFRS adoption period.

One possibility for this general trend is that international firms were withholding their listing decisions in the USA and Canadian exchanges until after the global financial crisis, so we are seeing more international listings in the USA and Canada in the post-IFRS adoption period, 2011-2013. The estimated coefficient on the interaction variable *POST x CANADA* is significantly negative ( $-0.008$ ,  $p < 0.01$ ), indicating that Canada (representing both the TSX and TSXV) lost ground in international listings after IFRS adoption in Canada, when benchmarked with NYSE and NASDAQ. These results do not support our first hypothesis, that Canada gained in international listings when compared to the US's exchanges after IFRS adoption in Canada.

With regard to other variables, the estimated coefficient for *GDP\_PER\_CAPITA* is significantly positive (0.056,  $p < 0.01$ ), signifying a positive relationship between *GDP\_PER\_CAPITA* and international listings. International firms prefer to list in countries that create more wealth. The estimated coefficient for *TRADING\_VOLUME* is negative ( $-0.001$ ) but insignificant. The significantly negative coefficient for the *CRISIS* variable ( $-0.007$ ,  $p < 0.01$ ) may reflect lower international listings during January 2008-June 2009 as international firms all over the world may have hesitated to list their stocks in the USA and Canada during this period of uncertainty.

It is important to note that the TSX is more comparable with regard to its information environment than the TSXV to the NYSE and NASDAQ exchanges. The TSX has more stringent listing requirements, comparable to the NYSE and NASDAQ, which is why these three exchanges facilitate trading (listing) for larger and more established firms. The TSX is also Canada's senior exchange representing more than 90 per cent of Canada's total market capitalization. On the other hand, the TSXV is a somewhat unique exchange with less stringent listing requirements and its firms (listers) are generally smaller in size, growth-oriented and less covered by analysts or the media. Hence, it makes sense to exclude TSXV in the inter-country tests (hereafter) and to run separate inter-country tests comparing TSX with NYSE and TSX with NASDAQ, respectively.

[Table IVA](#) covers our difference-in-difference regression for our inter-country test, using data from the TSX and NYSE. The results of this test are similar to our results in [Table III](#). These results again do not support our first hypothesis, that the TSX gained in international listings when compared to the NYSE after the IFRS adoption in Canada. [Table IVB](#) covers our difference-in-difference regression for our inter-country test, using data from the TSX and NASDAQ. The results of this test are also similar to our results in [Table III](#). These results again do not support our first hypothesis, that the TSX gained in international listings when compared to the NASDAQ after the IFRS adoption in Canada. Overall, both our main tests in Tables III, IVA and IVB do not support *H1*. It is likely that by 2011, when Canada adopted IFRS, would-be international listers had a much larger menu of international destinations in which to cross-list because of IFRS adoption by many countries in 2005 and corresponding improvements in other market qualities. Consequently, we may not see a strong positive effect in the Canadian stock exchanges

In [Table VA](#), we redefine our *POST* variable as 1 starting from 2010, one year before the mandatory IFRS adoption period. As we know that IFRS was not randomly or exogenously adopted in Canada, international firms are likely to have anticipated the adoption of IFRS in Canada. For example, the Big Four audit firms had institutionalized procedures regarding conversion from local GAAP to IFRS after ample experience with IFRS adoption in Europe in 2005, and they started adding new staff and initiating the transition procedure for large Canadian firms in 2008. The Canadian decision to adopt IFRS was made in August 2006, following the strategic plan outlined by the Canadian AcSB that was ratified in January of 2006. This put in motion, first a convergence path that was similar to the US GAAP and IFRS convergence with regard to the development of new standards, and second a path toward adoption of IFRS at the end of the five-year strategic plan. Moreover, under the terms of the Canadian adoption, companies with a December 31 year-end were required by the Canadian AcSB to prepare an IFRS balance sheet on January 1, 2010 so that they would be able to provide comparable financial statements for 2010 in the 2011 reporting package. International listers hoping to benefit from Canadian adoption may want to begin listing in 2010 to get set up for the full adoption in 2011.

In this regression model, our pre-IFRS adoption period covers monthly observations from January 2008 to December 2009, and our post-IFRS adoption period covers monthly observations from January 2010 to December 2011. The results of this regression ([Table VA](#)) are largely the same as those in [Table IVA](#), except that the estimated coefficient on the interaction variable *POST x CANADA* is significantly positive (0.004,  $p < 0.01$ ), indicating that the TSX gained ground in international listings after the IFRS adoption in Canada, when benchmarked with the NYSE. Here, these results do support our first hypothesis, that the TSX gained in international listings when compared to the NYSE. Similarly, in [Table VB](#), we redefine our *POST* variable as 1 starting from beginning of 2010, one year before the mandatory IFRS adoption period. This table covers our main difference-in-difference

Variables	Pred. sign	Coefficient	t-stats
International listings/Domestic listings (INT_LIST_DOM_LIST)			
<i>Panel A: multivariate regression of international listings in TSX vs NYSE where 2008 to 2010 is pre- and 2011 to 2013 is post-IFRS adoption period (three years vs three years)</i>			
Intercept	?	-1.904	-5.69***
POST	?	0.009	6.91***
CANADA	?	0.248	5.39***
POST x CANADA	+	-0.009	-6.09***
GDP_PER_CAPITA	+	0.120	5.96***
TRADING_VOLUME	+	0.003	0.28
CRISIS	-	-0.008	-8.22***
Adjusted R <sup>2</sup>		0.9521	
Number of observations		144	

<i>Panel B: multivariate regression of international listings in TSX vs NASDAQ where 2008 to 2010 is pre- and 2011 to 2013 is post-IFRS adoption period (three years vs three years)</i>			
Intercept	?	-1.751	-5.51***
POST	?	0.004	3.50***
CANADA	?	0.225	5.17***
POST x CANADA	+	-0.003	-2.45**
GDP_PER_CAPITA	+	0.111	5.80***
TRADING_VOLUME	+	0.009	0.95
CRISIS	-	-0.009	-8.89***
Adjusted R-Squared		0.9517	
Number of observations		144	

**Notes:** Panel A: \*If  $p$ -value (one-tailed) is  $<0.10$ ; \*\*if  $p$ -value (one-tailed) is  $<0.05$ ; and \*\*\*if  $p$ -value (one-tailed) is  $<0.01$ . The pre-IFRS adoption period consists of monthly observations from 2008 to 2010, and the post-IFRS adoption period is from 2011 to 2013. *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from non-Canada/non-US countries. *POST* is a dummy variable coded 1 for all years from 2011 to 2013 (the post-IFRS adoption period) and 0 for all years from 2008 to 2010. *CANADA* is coded 1 for the TSX and 0 for the NYSE. *POST x CANADA* captures the incremental effect for the TSX in terms of change in international listings relative to the change in international listings for the NYSE between the pre-IFRS and post-IFRS periods in Canada. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *CRISIS* is a dummy variable coded as 1 from January 2008 to June 2009 and 0 otherwise. Panel B: \*if  $p$ -value (one-tailed) is  $<0.10$ , \*\*if  $p$ -value (one-tailed) is  $<0.05$ , and \*\*\*if  $p$ -value (one-tailed) is  $<0.01$ . The pre-IFRS adoption period consists of monthly observations from 2008 to 2010, and the post-IFRS adoption period is from 2011 to 2013. *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from non-Canada/non-US countries. *POST* is a dummy variable coded 1 for all years from 2011 to 2013 (the post-IFRS adoption period) and 0 for all years from 2008 to 2010. *CANADA* is coded 1 for the TSX and 0 for the NASDAQ. *POST x CANADA* captures the incremental effect for the TSX in terms of change in international listings relative to the change in international listings for the NASDAQ between the pre-IFRS and post-IFRS periods in Canada. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *CRISIS* is a dummy variable coded as 1 from January 2008 to June 2009 and 0 otherwise

**Table IV.** Multivariate regression of international listings in TSX vs NYSE or TSX vs NASDAQ where 2008 to 2010 is pre- and 2011 to 2013 is post-IFRS adoption period



Variables	Pred. sign	International listings/Domestic listings (INT_LIST_DOM_LIST)	
		Coefficient	t-stats
<i>Panel A: multivariate regression of international listings in TSX vs NYSE where 2008 to 2009 is pre- and 2010 to 2011 is post-IFRS adoption period (one year earlier than the actual IFRS adoption period) (two years vs two years)</i>			
Intercept	?	-1.914	-4.19***
POST	?	0.008	5.18***
CANADA	?	0.242	3.88***
POST x CANADA	+	0.004	2.85***
GDP_PER_CAPITA	+	0.121	4.38***
TRADING_VOLUME	+	-0.030	-2.67***
CRISIS	-	-0.001	-1.10
Adjusted R <sup>2</sup>		0.9545	
Number of observations		96	
<i>Panel B: multivariate regression of international listings in TSX vs NASDAQ where 2008 to 2009 is pre- and 2010 to 2011 is post-IFRS adoption period (one year earlier than the actual IFRS adoption period) (two years vs two years)</i>			
Intercept	?	-1.444	-4.83***
POST	?	0.006	5.54***
CANADA	?	0.176	4.31***
POST x CANADA	+	0.007	7.45***
GDP_PER_CAPITA	+	0.092	5.13***
TRADING_VOLUME	+	-0.021	-2.95***
CRISIS	-	-0.002	-2.25**
Adjusted R <sup>2</sup>		0.9805	
Number of observations		96	

**Notes:** Panel A: \*If  $p$ -value (one-tailed) is  $<0.10$ ; \*\*if  $p$ -value (one-tailed) is  $<0.05$ ; and \*\*\*if  $p$ -value (one-tailed) is  $<0.01$ . The pre-IFRS adoption period is redefined as consists of monthly observations from 2008 to 2009, and the post-IFRS adoption period is from 2010 to 2011 (one year earlier than the formal adoption period). *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from non-Canada/non-US countries. *POST* is a dummy variable coded 1 for all years from 2010 to 2011 (the post-IFRS adoption period) and 0 for all years from 2008 to 2009. *CANADA* is coded 1 for the TSX and 0 for the NYSE. *POST x CANADA* captures the incremental effect for the TSX in terms of change in international listings relative to the change in international listings for the NYSE between the pre-IFRS and post-IFRS periods in Canada. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *CRISIS* is a dummy variable coded as 1 from January 2008 to June 2009 and 0 otherwise. Panel B: \*if  $p$ -value (one-tailed) is  $<0.10$ , \*\*if  $p$ -value (one-tailed) is  $<0.05$ , and \*\*\*if  $p$ -value (one-tailed) is  $<0.01$ . The pre-IFRS adoption period is redefined and consists of monthly observations from 2008 to 2009, and the post-IFRS adoption period is from 2010 to 2011 (one year earlier than the formal adoption period). *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from non-Canada/non-US countries. *POST* is a dummy variable coded 1 for all years from 2010 to 2011 (the post-IFRS adoption period) and 0 for all years from 2008 to 2009. *CANADA* is coded 1 for the TSX and 0 for the NASDAQ. *POST x CANADA* captures the incremental effect for the TSX in terms of change in international listings relative to the change in international listings for the NASDAQ between the pre-IFRS and post-IFRS periods in Canada. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *CRISIS* is a dummy variable coded as 1 from January 2008 to June 2009 and 0 otherwise

**Table V.** Multivariate regression of international listings in TSX vs NYSE or TSX vs NASDAQ where 2008 to 2009 is pre- and 2010 to 2011 is post-IFRS adoption period

regression for our inter-country test, using data from the TSX and NASDAQ. The results of this regression are largely the same as in [Table IVB](#), except that the estimated coefficient on the interaction variable  $POST \times CANADA$  is significantly positive (0.007,  $p < 0.01$ ), indicating that the TSX gained ground in international listings after the IFRS adoption in Canada when benchmarked with the NASDAQ. We interpret these two results that international firms that anticipated benefits from listing their stocks in the TSX began their Canadian listing before the mandatory IFRS adoption period, given that they had prior information about Canada's IFRS adoption date.

[Table VIA](#) covers our main difference-in-difference regression for our intra-country test. In this test, we keep the  $POST$  variable as we originally define it (1 starting from 2011). The estimated coefficient on the  $EXCHANGE$  is significantly negative ( $-0.009$ ,  $p < 0.01$ ), indicating that the junior TSXV, on average, attracts proportionately lower international listings from outside the North American, European, and Australasian regions than the benchmark larger and more international TSX. This result is consistent with prior literature showing that the TSXV is a local exchange that lists mostly newly established smaller firms from local extractive industries ([Khan et al., 2015](#); [Pandes and Robinson, 2013](#)). TSXV-listed firms have lower analyst coverage and less institutional investors' presence compared to firms listed in the TSX ([Pandes and Robinson, 2013](#); [Khan et al., 2015](#)); hence, there is greater bias for international firms in the TSXV because of greater information asymmetry in this exchange. Also, there is a greater presence of retail investors in this junior exchange, who have less resources for search costs and may be at a disadvantage to understand these smaller international firms from outside the North American, European and Australasian regions. The estimated coefficient on the  $POST$  variable is negative and significant ( $-0.002$ ,  $p < 0.05$ ), indicating that there was a drop in international listings from outside the North American, European, and Australasian regions in the post-IFRS adoption period, but the TSXV did not share in this loss (with the TSX) because there is an opposite coefficient of  $POST \times EXCHANGE$  (0.002,  $p < 0.05$ ).

In [Table VIB](#), we redefine our  $POST$  variable as 1 starting from 2010, one year before the mandatory IFRS adoption period using the earlier logic described for [Table VA and VB](#). In this regression model, our pre-IFRS adoption period covers monthly observations from January 2008 to December 2009, and our post-IFRS adoption period covers monthly observations from January 2010 to December 2011. The results of this regression ([Table VIB](#)) are the same for the  $EXCHANGE$  variable as those in [Table VIA](#). The estimated coefficient on the  $POST$  variable is now positive and significant (0.007,  $p < 0.01$ ), indicating that there was an increase in international listings from outside the North American, European and Australasian regions in the both the TSX and the TSXV in the post-IFRS adoption period. The coefficient of  $POST \times EXCHANGE$  is positive and significant (0.001,  $p < 0.05$ ) meaning that the TSXV gained even further ground in such international listings after the IFRS adoption in Canada when benchmarked with the TSX. These two results support our second hypothesis, that the TSXV gained in international listings from outside the North American, European and Australasian regions when compared to the TSX after the IFRS adoption in Canada. One of the key benefits of IFRS is that it provides more comparable financial statements across many countries and markets because of one common accounting language. Investors will be able to make use of more value relevant information under IFRS as IFRS emphasize more use of fair or market values in the proper financial statements. IFRS may have a greater impact in terms of reducing the disclosure cost concerns of retail investors in the TSXV, especially for international firms from outside the North American, European and Australasian regions.

Variables	Pred. sign	Coefficient	t-stats
International listings/Domestic listings (INT_LIST_DOM_LIST)			
<i>Panel A: multivariate regression of international listings in TSX vs TSXV where 2008 to 2010 is pre- and 2011 to 2013 is post-IFRS adoption period</i>			
Intercept	?	-0.256	-1.38
POST	?	-0.002	-2.36**
EXCHANGE	?	-0.009	-15.57***
POST x EXCHANGE	+	0.002	2.56**
GDP_PER_CAPITA	+	0.020	1.56
TRADING_VOLUME	+	-0.004	-0.30
CRISIS	-	-0.006	-9.62***
Adjusted R <sup>2</sup>		0.7885	
Number of observations		144	
<i>Panel B: multivariate regression of international listings in TSX vs TSXV where 2008 to 2009 is pre- and 2010 to 2011 is post-IFRS Adoption Period (two years vs two years)</i>			
Intercept	?	0.686	3.87***
POST	?	0.007	9.08***
EXCHANGE	?	-0.008	-19.42***
POST x EXCHANGE	+	0.001	2.02**
GDP_PER_CAPITA	+	-0.046	-3.69***
TRADING_VOLUME	+	-0.012	-0.98
CRISIS	-	-0.001	-1.37
Adjusted R <sup>2</sup>		0.9265	
Number of observations		96	

**Notes:** Panel A: \*If  $p$ -value (one-tailed) is  $<0.10$ ; \*\*if  $p$ -value (one-tailed) is  $<0.05$ ; and \*\*\*if  $p$ -value (one-tailed) is  $<0.01$ . The pre-IFRS adoption period consists of monthly observations from 2008 to 2010, and the post-IFRS adoption period is from 2011 to 2013. *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from outside the North American, European and Australasian regions. Please also note that we do not write non-Canada when we define international firms as Canadian firms are part of domestic firms. *POST* is a dummy variable coded 1 for all years from 2011 to 2013 (the post-IFRS adoption period) and 0 for all years from 2008 to 2010. *EXCHANGE* is coded 1 for the TSXV and 0 for the TSX. *POST x EXCHANGE* captures the incremental effect for the TSXV in terms of change in international listings relative to the change in international listings for the TSX between the pre-IFRS and post-IFRS periods in Canada. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *CRISIS* is a dummy variable coded as 1 from January 2008 to June 2009 and 0 otherwise. Panel B: \*if  $p$ -value (one-tailed) is  $<0.10$ , \*\*if  $p$ -value (one-tailed) is  $<0.05$ , and \*\*\*if  $p$ -value (one-tailed) is  $<0.01$ . The pre-IFRS adoption period consists of monthly observations from 2008 to 2009, and the post-IFRS adoption period is from 2010 to 2011. *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from outside the North American, European and Australasian regions. Please also note that we do not write non-Canada when we define international firms as Canadian firms are part of domestic firms. *POST* is a dummy variable coded 1 for all years from 2010 to 2011 (the post-IFRS adoption period) and 0 for all years from 2008 to 2019. *EXCHANGE* is coded 1 for the TSXV and 0 for the TSX. *POST x EXCHANGE* captures the incremental effect for the TSXV in terms of change in international listings relative to the change in international listings for the TSX between the pre-IFRS and post-IFRS periods in Canada. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *CRISIS* is a dummy variable coded as 1 from January 2008 to June 2009 and 0 otherwise

**Table VI.**  
Multivariate  
regression of  
international listings  
in TSX vs TSXV  
(Intra-country tests)

### 4.3 Robustness tests

It is possible that we observe our results in the inter-country test because we are using US exchanges as our benchmark (control group). We repeat all of our inter-country tests in [Tables IV](#) and [V](#) ([Tables VIIA and VIIB](#)) using listings data from the ASX. Australia adopted IFRS in 2005 – much earlier than Canada. Therefore, we do not expect any abnormal listings trend in ASX after so many years of IFRS adoption. Australia and Canada are similar to each other in many ways: Australian currency and economy largely mirror Canada's; both countries have a large number of natural resource firms and natural resource cross-listings and both have British heritage and stable economic and political institutions. To make proper comparisons, we eliminate Australian firms (now domestic firms) from the sample of international firms for both TSX and ASX data. We believe that Australian data may better mitigate concerns about country-level correlated omitted variables. All of our results in [Tables VIIA and VIIB](#), wherein we compare TSX with ASX, are largely consistent with our results in [Tables IVA, IVB, VA and VB](#), comparing TSX with NYSE and TSX with NASDAQ, respectively.

We note that Canada's financial crisis period spans from October 2008 to May 2009, much shorter (8 months) than the US's financial crisis period from December 2007 to June 2009 (19 months). We run regressions for all [Tables \(III, IVA, IVB, VA, VB, VIA and VIB\)](#) where we redefine *CRISIS* as 1 following Canada's financial crisis period. Again, the results of the regressions are consistent with our earlier results ([Tables III, IVA, IVB, VA, VB, VIA and VIB](#)), that our study does not find an increase in listing of international firms in the Canadian exchanges relative to the growth in such listings in the US exchanges during the post-IFRS adoption period.

## 5. Conclusions

With increasing use of IFRS throughout the world, the US regulators, the US Congress and other capital market participants seek answers to understand the costs and benefits of potential IFRS adoption in the USA. The USA remains undecided regarding mandatory IFRS adoption. We contribute to this debate by examining Canada's adoption of IFRS and its effect on growth in international stock listings in Canadian stock exchanges. Overall, our study does not find an increase in the presence of international firms in the Canadian exchanges relative to such listings in the US exchanges in the post-IFRS adoption period. It is likely that by 2011, when Canada adopted IFRS, would-be international listers had a much larger menu of international destinations in which to cross-list. However, when we redefine the IFRS adoption period as one year before the mandatory reporting year in 2011, our study finds a significant increase in international listings in the TSX, Canada's primary exchange, relative to such listings in the comparable US exchanges. We find similar results when we compare international listings in the TSX with listings in the ASX. Thus, it appears that international firms anticipated Canada's IFRS adoption, making it meaningful to pre-emptively cross-list in the Canadian exchange. In our intra-country test, we investigate if there were more international listings from outside the North American, European and Australasian regions in the post-IFRS adoption period in Canada's junior stock exchange, the TSXV, compared to such listings in the larger and more mature TSX. We find that the smaller, more local TSXV did experience significantly greater growth in international listings from outside the North American, European, and Australasian regions compared to such listings in the TSX. This is interesting because it indicates an increase in listing by firms facing the most acute communication concerns after IFRS adoption.

Variables	Pred. sign	Coefficient	t-stats
International listings/Domestic listings (INT_LIST_DOM_LIST)			
<i>Panel A: multivariate regression of international listings in TSX vs ASX where 2008 to 2010 is pre- and 2011 to 2013 is post-IFRS adoption period (three years vs three years)</i>			
Intercept	?	-0.013	-0.22
POST	?	-0.000	-0.45
CANADA	?	0.023	11.16***
POST x CANADA	+	0.002	1.44
GDP_PER_CAPITA	+	0.001	0.34
TRADING_VOLUME	+	-0.001	-0.48
CRISIS	-	-0.001	-1.95*
Adjusted R <sup>2</sup>		0.9656	
Number of observations		144	
<i>Panel B: multivariate regression of international listings in TSX vs ASX where 2008 to 2009 is pre- and 2010 to 2011 is post-IFRS adoption period (one year earlier than the actual IFRS adoption period) (two years Vs two years)</i>			
Intercept	?	-0.008	-0.26
POST	?	-0.000	-0.59
CANADA	?	0.020	19.82***
POST x CANADA	+	0.007	10.15***
GDP_PER_CAPITA	+	0.001	0.51
TRADING_VOLUME	+	-0.001	-1.60
CRISIS	-	0.000	0.65
Adjusted R <sup>2</sup>		0.9941	
Number of observations		96	

**Notes:** Panel A: \*If *p*-value (one-tailed) is <0.10; \*\*if *p*-value (one-tailed) is <0.05; and \*\*\*if *p*-value (one-tailed) is <0.01. The pre-IFRS adoption period consists of monthly observations from 2008 to 2010, and the post-IFRS adoption period is from 2011 to 2013. *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from non-Canada/non-USA/non-Australia countries. Canadian firms and Australian firms are domestic firms in their respective countries. *POST* is a dummy variable coded 1 for all years from 2011 to 2013 (the post-IFRS adoption period) and 0 for all years from 2008 to 2010. *CANADA* is coded 1 for the TSX and 0 for the ASX. *POST x CANADA* captures the incremental effect for the TSX in terms of change in international listings relative to the change in international listings for the ASX between the pre-IFRS and post-IFRS periods in Canada. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *CRISIS* is a dummy variable coded as 1 from January 2008 to June 2009 and 0 otherwise. Panel B: \*if *p*-value (one-tailed) is <0.10, \*\*if *p*-value (one-tailed) is <0.05, and \*\*\*if *p*-value (one-tailed) is <0.01. The pre-IFRS adoption period is redefined and consists of monthly observations from 2008 to 2009, and the post-IFRS adoption period is from 2010 to 2011 (one year earlier than the formal adoption period). *INT\_LIST\_DOM\_LIST* stands for the number of international listings each month divided by the number of domestic listings in an exchange each month. Please note that the number of international listings in this table includes international firms from non-Canada/non-USA/non-Australia countries. Canadian firms and Australian firms are domestic firms in their respective countries. *POST* is a dummy variable coded 1 for all years from 2010 to 2011 (the post-IFRS adoption period) and 0 for all years from 2008 to 2009. *CANADA* is coded 1 for the TSX and 0 for the ASX. *POST x CANADA* captures the incremental effect for the TSX in terms of change in international listings relative to the change in international listings for the ASX between the pre-IFRS and post-IFRS periods in Canada. *GDP\_PER\_CAPITA* is the log of GDP in US dollars per quarter divided by the population. *TRADE\_VOLUME* is a ratio of the trading volume each month in the exchange to GDP each month. *CRISIS* is a dummy variable coded as 1 from January 2008 to June 2009 and 0 otherwise

**Table VII.**  
Multivariate regression of international listings in TSX vs ASX



## Notes

1. One of the main tasks of the AcSB was to adopt standards that would help reduce differences between U.S. GAAP and Canadian GAAP (Discussion Paper of Accounting Standards in Canada: Future Directions, June 24, 2004).
2. Discussion in [www.frascanada.ca/international-financial-reporting-standards/resouces/basis-for-conclusions/item50749.pdf](http://www.frascanada.ca/international-financial-reporting-standards/resouces/basis-for-conclusions/item50749.pdf)
3. Canadian listings data is obtained from <https://www.tsx.com/listings/current-market-statistics/mig-archives>
4. Initial discussion in <http://www.frascanada.ca/international-financial-reporting-standards/resources/basis-for-conclusions/item50748.pdf>
5. International firms are strictly defined as non-USA/non-Canada in our inter-country test between Canada and the USA.
6. The TMX Group's website monthly listings data for Canada is available from 2008 onwards ([www.tsx.com/listings/current-market-statistics/mig-archives](http://www.tsx.com/listings/current-market-statistics/mig-archives))
7. We obtain Canadian monthly listings data from [www.tsx.com/listings/current-market-statistics/mig-archives](http://www.tsx.com/listings/current-market-statistics/mig-archives)
8. Canadian monthly listings data is obtained from [www.tsx.com/listings/current-market-statistics/mig-archives](http://www.tsx.com/listings/current-market-statistics/mig-archives)

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#### Further reading

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