

# IMPACT OF SARBANES-OXLEY ACT ON SEASONED EQUITY OFFERINGS BY CANADIAN CROSS-LISTED FIRMS: EVIDENCE FROM BOUGHT DEALS VS. FIRM COMMITMENT

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## ABSTRACT

*This paper examines the impact of the Sarbanes-Oxley Act on the market reaction and underwriting fees of two methods of choice for underwriting seasoned equity offerings: Bought deals and firm commitment, by Canadian firms cross-listed on major U.S. exchanges. After controlling for offer and firm characteristics, it finds the market reaction to offer announcements is more positive for bought deals than for firm commitment during the pre-Sarbanes period only. This shows that bought deals lost their indirect cost advantage after the passage of the Act. On the other hand, the underwriting fees are lower for bought deals than for firm commitment during the pre-Sarbanes period only. This shows that bought deals also lost their fees cost advantage after the passage of the Act.*

**JEL:** G24, G32

**KEYWORDS:** Sarbanes-Oxley Act, Seasoned Equity Offerings, Cross-Listed, Market Reaction, Underwriting Fees, Bought Deals, Firm Commitment

## INTRODUCTION

The Sarbanes-Oxley Act (SOX) is a federal law passed by the U.S. Congress in 2002 to restore investor confidence in U.S. capital markets dishonored by major corporate fraud. Research studies report that SOX has resulted in compliance costs higher than their expected benefits, mainly for companies subject to SOX from developed countries (Amaoko-Adu and Baulkaran, 2008; Bris, Cantale and Nishiotis, 2007; Li, 2011; Litvak, 2007, 2008). Eckbo, Masulis and Norly (2007) suggest that it would be relevant to explore the effects on issuing costs of important regulatory changes such as SOX. Two important costs associated to underwriting seasoned equity offerings are the market reaction to the offer announcement (indirect cost) and the underwriting fee (direct cost). Both types of cost are not trivial. Empirical evidence shows the average market reaction to offer announcements is around -2 percent and the underwriting fee around 4 to 5 percent of gross offering revenue.

Following Eckbo, Masulis and Norly (2007), this paper fills the gap by examining the effects of the Act on the market reaction and underwriting fees of seasoned equity offerings of bought deals and firm commitment, respectively, by Canadian firms cross-listed on the NYSE, AMEX and NASDAQ. After controlling for firm and offer characteristics, it finds bought deals show indirect and direct cost advantage to firm commitment during the pre-SOX period only. This reveals bought deals lost their cost advantage after the passage of SOX. Our results do not support the underwriting *certification* hypothesis for bought deals of Pandes (2010) after the passage of the Act. This hypothesis states the backing by underwriters on bought deals should result in lower market reaction to offer announcements and lower underwriting fees than firm commitment. The remainder of the paper is as follows. Next section provides a background on bought deals and firm commitment offers and literature review. The next section describes the data and methods. The following section reports the empirical results. The last section reports the conclusions.

## Background and Literature Review

This section provides a summary of the main features that distinguish bought deals and firm commitment as underwriting methods of seasoned equity offerings (SEO). In addition, it examines the relevant literature on both underwriting methods and the impact of Sarbanes-Oxley Act (SOX) on seasoned equity offerings by Canadian firms cross-listed in major U.S. exchanges. Bought deals (accelerated offers or shelf-registered offers in the U.S.) and firm commitment offers (marketed offers or non-shelf registered offers in the U.S.) are two methods of choice commonly used by companies to issue seasoned equity offerings. In both cases, the underwriter –typically an investment bank- buys the shares of common stock from the issuing company and resells them to investors at a predetermined offering price. The underwriting fee compensates the investment bank for helping the company in the equity offering.

Some distinguishing characteristics of bought deals and firm commitment offers are as follows. The time and requirements to register the SEO with regulators and exchanges are less for bought deals compared with firm commitment. In addition, the underwriting agreement of the seasoned equity offering, the issue price and offering size are determined around the announcement date for bought deals. The announcement date is the same as the issue date for bought deals unlike firm commitment, which is determined several days after the announcement. Bought deals, unlike firm commitment, have no *market out clause*. This means cancellation of the offer cannot occur if market conditions decline – that is, the investment banks assume all price risk. Bought deals, unlike firm commitment, do not include book building or road show. Briefly, this refers the procedure followed to gauge the demand for the equity offering among potential investors (mainly institutional investors). It also includes information about the issue to help decide the proper offering size and price. This results in faster completion and reduced marketing and distribution costs. Since the nineties bought deals have surpassed firm commitment as method of choice for underwriting seasoned offerings (Bortolotti, Megginson and Smart, 2008; Autore, Kumar and Shome, 2008; Pandes, 2010).

Empirical research on which underwriting method is cheaper reports no agreement. For example, Denis (1993) and Sherman (1999) report not difference in underwriting fees for shelf-registered offers (bought deals) and non-shelf registered offers (firm commitment) in the United States. Similarly, Bortolotti, Megginson and Smart (2008) do not find difference in market impact of accelerated deals (bought deals) and non-accelerated deals (firm commitment) for a sample of U.S. and non-U.S. seasoned equity offerings. On the other hand, Pandes (2010) reports lower underwriting fees and more positive price impact for bought deals than firm commitment during the period 1995-2005 for Canadian issuers. Pandes (2010) argues these lower costs are consistent with the certification incurred by underwriters on bought deals unlike firm commitment offers.

This paper extends the work of Rubalcava (2012, 2013) who examines the impact of the Sarbanes-Oxley Act on the market reaction to seasoned equity offering announcement and underwriting fees by Canadian cross-listed firms, respectively. Specifically, Rubalcava (2012) finds the price reaction to offer announcement of Canadian firms cross-listed in major U.S. markets has been more negative after the passage of the Act. This suggests the Act has been harmful for Canadian cross-listing issuers. On the other hand, Rubalcava (2013) finds the underwriting fees of seasoned equity offerings of Canadian cross-listing issuers did not change significantly after the passage of the Act. Both studies do not distinguish the impact of the Act on the market reaction and underwriting fees of firm commitment and bought deals. This paper examines this issue.

## Data and Methodology

The sample consists of 233 seasoned equity offerings (SEO) by Canadian cross-listed firms, from May 1995 to July 2008. The pre-SOX period (May 1995-December 2001) includes 144 SEO, 81 bought deals

and 63 firm commitment. The post-SOX period (January 2003-July 2008) includes 89 SEO, 52 bought deals and 37 firm commitment. The sample does not include eighteen offerings on the year of the Sarbanes-Oxley Act. This is to get clean and more transparent evidence on the difference on impact costs for firm commitment and bought deals during the pre-post SOX periods, respectively. The FP Advisor database and the Canadian Financial Markets Research Centre (CFMRC) are the source for the seasoned equity offerings and their determinants of the market reaction and underwriting fees. Statistics Canada (CANSIM) and the Center for Research in Security Prices (CRSP) are also sources of relevant market data. All seasoned equity offerings include shares of common stock only.

An international Asset Pricing Model (IAPM) is used to examine the market reaction - abnormal return around the announcement of seasoned equity. The model controls for domestic and U.S. market risks for the exposition of Canadian cross-listed issuers to both markets –similar to Foerster and Karoly’s (1999). The cross-sectional model that examines the relation between the abnormal return or  $CAR$  and the expected determinants is as follows:

$$CAR_i = \alpha_0 + (\alpha_1 + \delta_{DumBD} DumPostSOX) DumBD_i + (\alpha_2 + \delta_{RUNUP} DumPostSOX) RUNUP_i + (\alpha_3 + \delta_{RELOFFER} DumPostSOX) RELOFFER_i + \dots + (\alpha_{n-1} + \delta_{DumGLO} DumPostSOX) DumGLO_i + \alpha_n DumYear_{t=1995} + \dots + \alpha_{n+13} DumYear_{t=2008} + \varepsilon_i \quad (1)$$

Equation (1) estimates the coefficients for the overall sample period and simultaneously for the pre and post SOX periods for firm commitment and bought deals, respectively. The model includes determinants well documented in the SEO literature. The variables in equation (1) are as follows.  $CAR_i$  is the three-day abnormal return for the SEO announcement window [AD-1, AD+1] for firm commitment offers of firm  $i$  from an IAPM model. We use an adjusted version of  $CAR$  ( $CAR_{adj}$ ) for bought deals as in Pandes (2010). Specifically, the equation is

$$CAR_{adj} = \left(\frac{1}{1-\alpha}\right) CAR + \left(\frac{\alpha}{1-\alpha}\right) \left(\frac{P_b - P_o}{P_b}\right) \quad (2)$$

where  $\alpha$  is the number of shares issued divided by the total number of shares outstanding after the issue.  $P_b$  is the shares price before the SEO announcement;  $P_o$  is the offering price. This formula removes the discount impact on the  $CAR$  for bought deals. The price discount is determined at the offer announcement for bought deals and before the closing date of the issue for firm commitment. The price discount or *underpricing* occurs when the offer price is lower than the closing price on the day before the issue date. (This paper does not examine the price discount, which is also an important direct cost for bought deals and firm commitment offers.)

$DumBD$  is a dummy variable that equals one if the SEO’s method of choice is a bought deal and zero if it is firm commitment.  $DumPostSOX$  is a dummy variable that equals one during the time after the SOX and zero before ( $DumPreSOX$ ).  $RUNUP$  is the abnormal return for the SEO pre-announcement window [AD-26, AD-2] from an IAPM.  $RELOFFER$  is the ratio of the size of the offering to the total number of shares outstanding pre-announcement.  $DumOAO$  is a dummy variable that equals one if the SEO has an overallotment option and is zero otherwise.  $BETA$  is the coefficient of the Canadian market risk premium estimated from the IAPM model; it measures firm’s systematic risk.  $BRUNNERS$  is the number of times an investment bank appears as a book runner in a SEO, it measure underwriter reputation.  $DumXY$  is a dummy variable that equals one if the SEO is for a firm cross-listed on the NYSE and AMEX and zero on NASDAQ ( $DumQ$ ). Reason for using one dummy for firms listed on the NYSE and AMEX, and the other dummy for NASDAQ is as follows.

The NYSE/AMEX and NASDAQ are different trading mechanisms with firms having different trading behaviors. In addition, both trading mechanisms are geared to different company clientele.  $DumGLO$  is a

dummy variable that equals one if the SEO is issued simultaneously in other countries (mostly U.S.) and Canada, and zero in Canada only.  $DumYEAR_{\tau}$  are dummy variables that control for annual economic conditions from 1995 to 2008. A cross-sectional regression of underwriting fees on expected determinants uses also equation (1).  $FEES$  is the cash fee as a percent of gross proceeds, that is the gross offering revenue, paid by the issuing firm to the underwriter(s).  $Ln(GPROCEEDS)$  is the natural log of gross offering revenue in Canadian dollars of July 2008. It measures economies of scale involving a negative relation between fees and offer size (Smith, 1977).  $PRICE$  is the stock price 2 days before the announcement day of the SEO as in Butler, Grullon and Weston (2005) in Canadian dollars of July 2008.  $SYNCH$  is an acronym for synchronicity and is equal to the natural log ratio between the Adjusted R square and (1-Adjusted R square) following Teoh, Yang and Zhang (2009); it measures earnings certainty. The Adjusted R square is calculated from an IAPM regression between the daily excess return of a Canadian cross-listed issuer and the Canadian and U.S. market risk premiums.  $CHTURNOVER$  is the change in the average value of shares (volume) turnover between the period [AD-120, AD-61] and [AD-60, AD-2], where AD is the announcement date of the offer. Share turnover is equal to the ratio of shares volume to the total number of shares outstanding.  $CHTURNOVER$  measures price uncertainty as in Dichev, Huang and Zhou, 2011.

$RSEC\_OFFER$  is the ratio of number of shares sold by current shareholders to the total number of shares offered as in Lee and Masulis (2009). The  $FEES$  regression includes determinants from the  $CAR$  model such as  $DumOAO$ ,  $BETA$ ,  $Ln(BRUNNERS)$ ,  $DumGLO$  and  $DumXY$ . The model include dummy variables that classify the purpose of the offer as follows:  $D0$  (unknown),  $D1$  (working capital),  $D2$  (capital investment),  $D3$  (general corporate) and  $D4$  (debt reduction).  $\varepsilon_i$  is the error term that is assumed to be independently and normally distributed; that is,  $\varepsilon_i \sim N(0, \sigma^2)$ .

## EMPIRICAL RESULTS

### Abnormal Returns for Seasoned Equity Offerings of Bought Deals and Firm Commitment

Table 1 reports the mean (median) cumulative average abnormal return ( $CAAR$ ) values for seasoned equity offerings (SEO) by Canadian cross-listed issuers. It comprises the overall period, pre and post-SOX periods, respectively. It also includes the mean (median) values in those periods for bought deals and firm commitment, respectively. Based on columns (2), (3) and (4) of Table 1, show the mean  $CAAR$  value of bought deals is slightly higher than firm commitment (p-value of difference is 0.0770) for the overall period. However, the cost advantage is slightly significant (p-value of 0.0895) during the pre-SOX period only. This preliminary result shows that bought deals lost indirect cost advantage after the passage of SOX.

Table 1: Mean (Median) CAAR Values For Seasoned Equity Offerings

Period	(1) All SEO [233]	(2) Bought Deals [133]	(3) Firm Commitment [100]	(4) P-Value Difference BD Vs. FC Mean (Median)
1995-2008	1.88% (-2.27%)	-1.05% (-1.76%)	-2.99% (-2.96%)	0.0770* (0.2568)
Pre-SOX	-0.81% (-1.60%)	-0.306% (-1.27%)	-2.25% (-2.13%)	0.0895* (0.3735)
Post-SOX	-3.61% (-3.75%)	-3.16% (-2.99%)	-4.24% (-3.93%)	0.4098 (0.4613)

*This table reports the mean (median) cumulative average abnormal returns (CAAR) for seasoned equity offerings (SEO) by Canadian firms cross-listed on the NYSE.AMEX and NASDAQ. It includes the overall, pre and post-SOX periods for bought deals (BD) and firm commitment (FC), respectively. The first row reports the number of SEO in brackets. \*\*\*, \*\* and \*denote significance at the 1, 5 and 10 percent levels.*

This section examines whether bought deals show indirect cost advantage on firm commitment after controlling for offer and firm characteristics. It also explores whether the determinants of bought deals and firm commitment are the same for the pre- and post-SOX period, respectively. Table 2 reports various regressions of cumulative average abnormal return (*CAAR*) around the announcement date of seasoned equity offerings on expected determinants. Regression (1) reports the coefficient of *DumBD* is positive and significant at the 10 percent level. It shows bought deals have more positive market reaction than firm commitment offers during the overall period. In addition, the market reaction to all offers is more negative during the post-SOX period as shown by the significant and negative coefficient (-0.027) of *DumPostSOX*. This is consistent with the results in Table 1. Regressions (2) and (3) report the estimated coefficient of *DumBD* is positive and significant during the pre-SOX period only. The results show bought deals have more positive market reaction than firm commitment offers during the pre-SOX period only, after controlling for other determinants.

Table 2: Determinants of Announcement Abnormal Returns for Seasoned Equity Offerings of Canadian Cross-Listed Firms

Variables	(1) Overall Period [233]	(2) Pre-SOX Period [144]	(3) Post-SOX Period [89]	(4) Bought Deals Pre And Post SOX Periods [133]	(5) Firm Commitment Pre And Post SOX Periods [100]
<i>Constant</i>	-0.0286	-0.0298	-0.403	-0.0078	0.2473
<i>DumBD</i>	0.0225*	0.0322*	-0.0080		
<i>DumBD*DumPostSox</i>				-0.0328	
<i>DumFC*DumPostSOX</i>					-0.0113
<i>RUNUP</i>	0.0637**	0.1042***	-0.0579	0.1710***	0.0631
<i>RUNUP*DumPostSOX</i>				-0.2138**	-0.1571
<i>RELOFFER</i>	-0.0632	-0.1144*	-0.0329	-0.2163	-0.0679
<i>RELOFFER*DumPostSOX</i>				0.1393	0.0327
<i>DumOAO</i>	0.0429 ***	0.0516***	0.0314**	0.0802***	0.0171
<i>DumOAO*DumPostSOX</i>				-0.0517*	0.0201
<i>BETA</i>	0.0143*	0.0220	0.0019	0.0282	0.0230
<i>BETA*DumPostSOX</i>				-0.0209	-0.0263
<i>BRUNNERS</i>	-0.0003	-0.0008*	0.0001	-0.0005	-0.0008
<i>BRUNNERS*DumPostSOX</i>				0.0008	0.0007
<i>DumXY</i>	-0.0243	-0.382***	0.0118	-0.0491***	-0.0278
<i>DumXY*DumPostSOX</i>				0.0472	0.0555
<i>DumGLO</i>	0.0031	0.0271*	-0.0360**	0.0197	0.0425**
<i>DumGLO*DumPostSOX</i>				-0.0622	-0.0791**
<i>DumPostSOX</i>	-0.0270**				
R <sup>2</sup> Adj	0.146	0.233	0.075	0.231	0.152

This table reports the cross-sectional regression results between abnormal returns and expected determinants for the overall sample of seasoned equity offerings (SEO) by Canadian cross-listed issuers on major U.S. exchanges at the announcement date. The abnormal returns are regressed on determinants such as price run-up (*RUNUP*), ratio of offer size to shares outstanding (*RELOFFER*), stock's beta (*BETA*), number of times an underwriter appears as a book runner (*BRUNNER*). It also includes the dummy variables *DumBD* (bought deals), *DumPostSOX* (post-SOX period), *DumOAO* (overallocation option), *DumXY* (NYSE/AMEX cross-listing venue), *DumGLO* (global issuance). The first row shows the number of SEO in brackets. \*\*\*, \*\* and \*denote significance at the 1, 5 and 10 percent levels.

Regressions (4) and (5) of Table 2 show the determinants of *CAAR* for bought deals and firm commitment for the pre- and post-SOX periods, respectively. Based on regression (4), price run-up (*RUNUP*) and the overallocation dummy variable (*DumOAO*) are positively related to *CAAR* for the pre-SOX period only. On the other hand, the coefficient of *DumXY* is negative and significant during the pre-SOX period only. This shows a negative price impact occurs at the offer announcement date for Canadian firms cross-listed in NYSE/AMEX during the pre-SOX period. Even though the coefficient of the interaction variable for the post-SOX period, *RUNUP\*DumPostSOX* (*DumOAO\*DumPostSOX*) is negative and significant at 5 percent (10 percent), their coefficients are not significant for the post SOX period based on unreported regression results. Regression (5) reports the indicator variable for global offers (*DumGLO*) is the only significant determinant for firm commitment offers and for the pre-SOX period only. Based on an unreported regression the coefficient estimate of *DumGLO* is not significant for the post-SOX period. This shows firm commitment global offers had positive market reaction during the pre-SOX period only.

None of the coefficients for the dummy years is significant for firm commitment and bought deals, respectively. Overall, the results overall show no determinants of abnormal returns for bought deals and firm commitment offers are significant during the post-SOX period. In sum, different determinants affect bought deals and firm commitment offers for the pre-SOX period only.

### Underwriting Fees for Seasoned Equity Offerings of Bought Deals and Firm Commitment

Table 3 reports the mean (median) underwriting fee values for seasoned equity offerings (SEO) of Canadian firms cross-listed on major U.S. exchanges. It includes the overall, pre and post-SOX periods and distinguished by bought deals and firm commitment, respectively. Columns (2), (3) and (4) of Table 3 show the mean fee value of bought deals (4.5%) is significantly lower than firm commitment (4.94%) (p-value of difference is 0.0077) for the pre-SOX period. However, the cost advantage of bought deals disappears during the post-SOX period as reported by the non-significant p-value of 0.8261. This early result shows that bought deals lost their fee cost advantage after the passage of SOX.

Table 3: Mean (Median) Underwriting Fees for Seasoned Equity Offerings

Period	(1) All SEO [233]	(2) Bought Deals [133]	(3) Firm Commitment [100]	(4) P-Value Difference Vs. FC Mean (Median)
1995-2008	4.70%	4.58%	4.87%	0.0208**
Pre-SOX	(4.29%)	(4.02%)	(4.65%)	(0.0282)**
Post-SOX	4.69%	4.5%	4.94%	0.0077***
	(4.27%)	(4%)	(4.64%)	(0.028)**
	4.71%	4.70%	4.74%	0.8261
	(4.56%)	(4.50%)	(4.65%)	(0.5827)

*This table shows the mean (median) underwriting fees for seasoned equity offerings (SEO) of Canadian firm cross-listed on major U.S. exchanges. It includes the overall, pre and post-SOX periods for all SEO, bought deals (BD) and firm commitment (FC), respectively. The first row reports the number of SEO in brackets. \*\*\*, \*\* and \* denote significance at the 1, 5 and 10 percent levels.*

This section examines whether bought deals report lower underwriting fees than firm commitment after controlling for firm and offer characteristics. The sample includes only 2004 seasoned equity offerings due to missing or error data in expected determinants. These reduced data produce similar results as those reported in Table 1. The section also explores whether the same determinants affect firm commitment and bought deals for the pre- and post-SOX period, respectively. Table 4 reports cross-sectional regressions of underwriting fees on offer determinants by Canadian cross-listed issuers on major U.S. exchanges. Regression (1) reports a negative and significant coefficient (-0.2589) of *DumBD* for the overall period. This result shows bought deals report lower fees than firm commitment during the overall period. However, the coefficient of *DumBD* is only significant for the pre-SOX period as reported in regressions (2) and (3). This reveals the fees advantage of bought deals on firm commitment disappeared after SOX, after controlling for firm and offer characteristics.

Columns (4) and (5) of Table 4 report the regression results of underwriting fees for bought deals and firm commitment, respectively. Regressions (4) and (5) show *Ln(GProceeds)* (proxy for economies of scale between fees and dollar offer size) and *DumGLO* (global offer) are the only common determinants of fees for bought deals and firm commitment offers and for the pre-SOX period only. The negative coefficient of *Ln(GProceeds)* shows underwriting fees decreases with offer size for the pre-SOX period. Similarly, the positive coefficient of *DumGLO* shows underwriting fees increases with global offerings for the pre-SOX period. Based on an unreported regression, the coefficient of *Ln(GProceeds)* of -0.3680 [which is equal to the coefficient of the *Ln(GProceeds)*, -0.3897, and the interaction terms *Ln(GProceeds)\*Ln(GProceeds)*, 0.0211] is highly significant (p-value of 0.0029) during the post-SOX period for bought deals. Following similar procedure, the coefficient of *DumQ* (NASDAQ cross-listing issuer) is negative and significant for the post-SOX period for bought deals. These results show

underwriting fees for bought deals are decreasing with gross proceeds and for offers of cross-listing firms in NASDAQ, during the post-SOX period.

Table 4: Determinants of Underwriting Fees for Seasoned Equity Offerings of Canadian Cross-Listed Firms

Variables	(1) Overall Period [204]	(2) Pre-SOX Period[121]	(3) Post-SOX Period [83]	(4) Bought Deals Pre And Post SOX Periods [118]	(5) Firm Commitment Pre And Post SOX Periods [86]
Constant	10.5328***	11.2973***	10.5270***	10.4522***	11.4021***
DumBD	-0.2589**	-0.3975**	-0.0289		
DumBD*DumPostSOX				0.8761	
DumFC*DumPostSOX					1.0895
CHTURNOVER	0.0006	0.0015	0.0036**	0.00009	0.0037
CHTURNOVER*DumPostSOX				0.00197	0.0002
DumOAO	0.1986**	0.2015	0.0215	0.0339	-0.2474
DumOAO*DumPostSOX				-0.0835	0.3673
BETA	0.3608***	0.2937*	0.4520***	0.1641	0.5797**
BETA*DumPostSOX				-0.0729	-0.3375
Ln(BRUNNERS)	-0.0928**	-0.0321	-0.1750***	-0.0630	0.0114
Ln(BRUNNERS*DumPostSOX)				0.0290	-0.2466
PRICE	-0.0065***	-0.0073***	-0.0026	-0.0054	-0.0075**
PRICE*DumPostSOX				0.0038	0.0061
Ln(GProceeds)	-0.3642***	-0.3680***	-0.2808***	-0.3897***	-0.3775***
Ln(GProceeds)*DumPostSOX				0.0216	-0.0030
SYNCH	-0.1358***	-0.0789	-0.2457***	-0.0259	-0.1639*
SYNCH*DumPostSOX				0.0501	-0.1027
RSEC_OFFER	-0.4094*	0.0148	-1.1315***	0.3336	0.2474
RSEC_OFFER)*DumPostSOX				-0.7919	-2.2770*
DumGLO	0.2623**	0.5794***	-0.097	0.3994*	1.0227***
DumGLO*DumPostSOX				-0.6565	-0.5347
DumQ	0.0986	0.3697**	-0.2998	-0.0968	0.7755***
DumQ*DumPostSOX				-0.4024	-1.3410**
D1	0.1639	0.4078	-0.2318	0.2564	1.5057***
D1*DumPostSOX				-0.4338	-1.9624*
D2	-0.2231	-0.1975	-0.5440	0.0770	-0.0425
D2*DumPostSOX				-0.2375	-0.9890
D3	-0.1521	0.0084	-0.6460*	0.5484	0.9793**
D3*DumPostSOX				0.01710	-1.6310
D4	-0.1839	0.0101	-0.9918**	-0.0249	0.4680
D4*DumPostSOX				-0.4344	-2.2237
R <sup>2</sup> Adj	0.535	0.542	0.590	0.541	0.693

This table reports the cross-sectional regression on underwriting fees on expected determinants of seasoned equity offerings (SEO) by Canadian cross-listed issuers on major U.S. exchanges. The expected determinants are change on value of shares turnover (CHTURNOVER), stock's beta (BETA), natural log of number of times an underwriter appears as a book runner ((Ln(BRUNNERS)), share price two days before SEO announcement (PRICE), natural log of gross proceeds (Ln(GProceeds)), synchronicity (SYNCH) as a proxy for earnings uncertainty, RSEC\_OFFER is the ratio of secondary offering (non-capital raising) to offer size. It includes the dummy variables DumBD (bought deals), DumPostSOX (post-SOX period), DumOAO (overallocation option), DumXY (NYSE/AMEX cross-listing venue), DumGLO (global issuance). Dummy variables indicating the SEO purpose are D0 (unknown), D1 (working capital), D2 (capital investment), D3 (general corporate) and D4 (debt reduction). The first row shows the number of SEO in brackets. \*\*\*, \*\* and \* indicate significance at the 1, 5 and 10 percent levels.

Regression (5) reports the determinants, other than Ln(GProceeds) and DumGLO that are significant for firm commitment offers, for the pre-SOX period. For example, the coefficient of PRICE is negative and significant showing underwriting fees are decreasing with share price consistent with Buttler, Grullon and Weston (2005). The coefficient of SYNCH is negative and slightly significant suggesting lower fees for firms with lower earnings uncertainty, following Teoh, Yang and Zhang (2009). The coefficient of BETA is positive and significant suggesting higher fees for firms with higher systematic risk. Similarly, the positive and significant coefficient of DumQ shows offerings of firms cross-listed in NASDAQ report higher fees than those cross-listed in NYSE/AMEX.

The coefficients of the dummy variables for the purpose of the offer such as D1 (working capital) and D3 (general corporate) are positive and significant. This implies that fees are increasing on working capital

and general corporate purposes, during the pre-SOX period. Based on an unreported regression, *SYNCH* is the only determinant that is significant for firm commitment offers during the post-SOX period. The coefficient of *SYNCH* is negative and significant (-0.2666, p-value of 0.0120), showing firms with lower earnings uncertainty report lower fees for firm commitment offers during the post-SOX period. In short, regressions (4) and (5) of Table 4 show natural log of gross proceeds is the only common determinant of underwriting fees for bought deals and firm commitment offers for the pre-SOX period only. On the other hand, the determinants of fees for bought deals and firm commitment are different during the post-SOX period. Even though the underwriting fees of firm commitment and bought deals are not significantly different during the post-SOX period, their fees respond to different set of determinants.

## CONCLUDING COMMENTS

The goal of this paper is to examine the effects of Sarbanes-Oxley Act (SOX) on issuing costs of two underwriting methods for seasoned equity offerings; bought deals and firm commitment, by Canadian firms cross-listed on the NYSE, AMEX and NASDAQ. Two important issuing costs are the market reaction to the offer announcement (indirect cost) and the offer underwriting fees (direct cost). The sample consists of 233 seasoned equity offerings by Canadian cross-listed firms, from 1995 to 2008. The pre-SOX period (1995-2001) includes 144 offers and the post-SOX period (2003-2008) includes 89 offers. An international Asset Pricing Model (IAPM) examines the market reaction (abnormal return) around the announcement to offer announcements. A cross-sectional model tests the relation between the abnormal return and the expected determinants for bought deals and firm commitment offers, respectively. The analysis here shows the market reaction to offer announcements is more positive for bought deals than firm commitment for the pre-SOX period only, after controlling for offer and firm characteristics. Similarly, the underwriting fees are lower for bought deals than firm commitment also during the pre-SOX period only, after controlling for offer and firm characteristics.

These results reveal bought deals lost their indirect and direct cost advantage after the passage of SOX. In addition, the issuing costs of bought deals and firm commitment offers respond to different sets of determinants before and after SOX. These findings suggest the certification hypothesis of bought deals of Pandes (2010), does not hold for Canadian cross-listed firms after the passage of the Act. This hypothesis assumes the certification incurred by underwriters on bought deals should result in more positive price reaction to seasoned equity offering announcements and lower underwriting fees compared to firm commitment. Pandes' paper includes all offers by publicly traded Canadian firms during the period 1993-2005. It also does not distinguish between non-cross-listed and cross-listed firms. Our findings suggest the Act may have made irrelevant the certification for bought deals by Canadian cross-listed firms.

Some limitations of this paper are as follows. It omits determinants that may give insights on the market reaction to offer announcements and underwriting fees, for example, insider ownership of the firm and financial institution shareholdings. In addition, it does not examine the price discount effect, which is also an important issuing cost for bought deals and firm commitment offers. A research topic worth examining is whether the findings and implications of this paper are generalisable for similar underwriting methods of seasoned equity offerings in U.S. exchanges by U.S. and non-Canadian cross-listed firms.

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