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IMPACT OF CANADIAN SOX ON DETERMINANTS OF EQUITY ISSUANCE COSTS FOR BOUGHT DEALS AND MARKETED UNDERWRITTEN OFFERS

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ABSTRACT

This manuscript explores the effect of Canadian SOX (CSOX) on determinants of equity issuance costs (underwriting fees and offer price discount) for Canadian bought deals and marketed underwritten equity offers. CSOX is a crucial piece of legislation equivalent to the U.S. Sarbanes-Oxley Act. Bought deals and marketed underwritten offers are two methods of choice for issuing common stock by exchange-traded companies. Are the determinants of underwriting fees and price discount for both underwriting methods the same before and after the passage of Canadian law? From eleven expected determinants of underwriting fees, findings show gross offer proceeds is the only determinant significant in the pre-and post-CSOX periods for both bought deals and marketed underwritten offers. The determinant associated with stock return volatility is significant during the pre- and post-CSOX periods for bought deals only. On the other hand, from fourteen expected determinants of offer price discount, volatility of stock returns and stock spread are the only common determinant for the pre- and post-CSOX periods for bought deals only. In general, the results reveal the Canadian legislation had a different effect on determinants of issuance costs for both underwriting methods.

JEL: G24, G32

KEYWORDS: Underwriting Fees, Price Discount, Bought Deals, Marketed Underwritten Offers, Canadian SOX, Sarbanes Oxley, Seasoned Equity Offerings

INTRODUCTION

The purpose of this study is to provide evidence on whether expected determinants of underwriting fees and price discount are the same before and after the passage of Canadian SOX (CSOX) for seasoned equity offerings of bought deals and marketed underwritten offers, respectively. CSOX is legislation equivalent to the U.S. Sarbanes-Oxley Act (USSOX). After the passage of USSOX in 2002, many countries passed similar legislation, including Canada, which became effective in 2005 (Rubalcava, 2012). The main goal of both laws is to protect investors against corporate wrongdoing through rules and provisions for improving corporate governance for publicly listed companies and the quality of financial information. Seasoned equity offerings (SEO) are company shares of common stock sold to investors after an initial public offering. Underwritten fees (also called gross spread) and price discount (also called underpricing) are major issuance costs for public companies that sell shares in the stock market. These costs are not trivial for issuing companies. For example, underwriting fees of Canadian issuers are around five percent of gross offering revenues paid to the investment bank, which helps sell the shares to investors (Rubalcava, 2018). By comparison, the underwriting fees for U.S. firms are in the range of 3 to 8 percent (Butler, Grullon, and Weston 2005). On the other hand, the price discount on issued shares offered to selected investors is on average around 3 to 5 percent of the market share price for Canadian firms (Rubalcava, 2020). For U.S. firms is around 2.4 percent (Autore, 2011), and for global offers around 4.6 percent (Bortolotti, Megginson, and Smart, 2008). Bought deals and marketed underwritten offers are alternative methods of choice of stock offers by company issuers.

This manuscript extends the work of Rubalcava (2018) on the impact of Canadian SOX on underwriting fees for Canadian firms listed on the Toronto Stock Exchange. Also, it extends the work of Rubalcava (2020) on the impact of CSOX on price discount of Canadian equity offers. However, unlike those studies, this study goes further by finding out whether determinants of underwriting fees (and offer price discount) are the same before and after the Canadian SOX for Canadian bought deals and marketed underwritten offers, respectively. Specifically, the main contribution is to corroborate whether the significant determinants in the period before CSOX (1999-2005) are also significant afterwards (2006-2011). These two periods include similar number of years and enough data to get reliable comparative results. The post-CSOX period also incorporates as determinants the years of the financial crisis (2007-2009), a period that significantly affected financial markets worldwide. Did these years have an impact on equity issuance costs? (Note: The term significant refers to *statistically* significant.) The determinants are from research studies, which account for offer and firm size, stock and market volatility, systematic risk, liquidity, underwriting reputation, intended use of funds and others.

Findings show gross offer proceeds (*LnGProceeds*) – a proxy for offer economies of scale- is the only significant determinant of underwriting fees for bought deals and marketed underwritten offers for both the pre- and post-CSOX periods. Stock return volatility (*RetVol*) is a significant determinant for the pre-and post-CSOX periods for bought deals only. On the other hand, the year 2007 is significant determinant for marketed underwritten offers (higher fees), and for bought deals, the year 2009 was significant determinant (lower fees). On determinants of offer price discount, stock return volatility and stock spread are the only significant determinant for the pre- and post-CSOX periods for bought deals only. On the other hand, I did not find consistent determinants for the pre- and post-CSOX periods for offer price discount of marketed underwritten offers. Also, none of the financial crisis years had an effect on price discount. Overall, the results show that most significant (nonsignificant) determinants in the pre-CSOX period are not significant (significant) after the post-CSOX period. This implies the Canadian SOX had a different effect on determinants of issuance costs for each underwriting method. The paper is organized as follows. Next section includes the literature review. Followed by the section of data and methodology. Next section reports and discusses the results. Last section shows the summary and conclusion.

LITERATURE REVIEW

This section examines the main features of bought deals and marketed underwritten offers. Then follows a review of relevant research on underwriting fees and price discount for seasoned equity offerings. Finally, it closes with research questions**.** Bought deals and marketed underwritten offers are two methods of choice for seasoned equity offerings by issuing companies. Both methods are mainly underwritten by an investment bank or bank syndicate, which markets the issue among potential investors (typically institutional investors, such as mutual funds, pension funds, hedge funds, and insurance companies). Usually, the investment bank commits to buying the shares from the issuing company and selling them to investors. Investment banks also help to comply with government and stock exchange rules. They charge an underwriting fee to the issuing company for these services, typically a percent of gross offer revenue.

A quick review of distinguishing features of Canadian bought deals and marketed underwritten offers from Pandes (2010) and Gunay and Ursel (2015) is as follows. Bought deals are equity offers immediately at or shortly after the announcement date. On the other hand, marketed underwritten offers are issued several days after the offer announcement. This allows investment banks the opportunity to promote the offering to potential investors through *roadshows*. These are presentations about the characteristics of the issue, its intended use of funds and other relevant information. The interest shown by investors provides valuable information about the offer demand, offer size and price. Marketed underwritten offers also include a *market-out* clause, meaning that if market conditions are unfavorable for the stock offer, the investment bank can cancel it. Bought deals do not have a *market-out* class and *roadshow,* which makes bought deals

seemingly riskier. However, investment banks mitigate the risk because they previously certify bought deals (Pandes, 2010), unlike marketed underwritten offers, which are not.

Research on underwriting fees and price discount of seasoned equity offerings is extensive. Eckbo, Masulis and Norli (2007) and Papaioannou and Karagozoglu (2017) provide an excellent review on these issuance costs. Evidence on whether bought deals or marketed underwritten offers incur low underwritten fees is overwhelming in favor of the former. These studies include Bortolotti, Megginson, and Smart (2008), Gao and Ritter (2010), Calomiris and Tsoutsoura (2010), Pandes (2010), Karpavicius and Suchard (2012), Koerniadi et al. (2015), and Rubalcava (2018, for Canadian non-cross-listed offers). On the other hand, studies finding no difference in fees are Denis (1993), Sherman (1999), and Rubalcava (2018, for Canadian cross-listed offers). Those studies control for a different set of determinants.

The determinants of underwritten fees for Canadian firms examined here are from the above studies and others. These determinants account for economies of scale (Smith, 1977; Altinkilic and Hansen, 2000), distribution risk (Butler, Grullon, and Weston (2005), firm size (Hansen and Torregrosa, 1992), systematic risk (Bhagat, Marr, and Thompson, 1985), stock volatility (Bae and Levy, 1990; Hansen and Torregrosa, 1992; Altinkilic and Hansen, 2003), underwriter reputation and prestige (Chemmanur and Fulghieri, 1994; Calomiris and Tsoutsoura, 2010; Jeon and Ligon, 2011; Fermando et al., 2015), stock liquidity (Butler, Grullon, and Weston, 2005), and intended use of funds (Rubalcava, 2018).

Another essential issuance cost for seasoned equity offerings is the share price discount or underpricing. Price discount usually occurs when the price offered to investors (typically institutional investors) is below the market price (i.e., closing share price before the issue date). An exciting review of why underpricing of stock offers occurs is by Papaioannou and Karagozoglu (2017). Research evidence on whether bought deals or marketed underwritten offers incur low underpricing is inconclusive. Studies reporting little underpricing for bought deals compared to marketed underwritten offers are Bortolotti, Megginson, and Smart (2008) and Gustafson (2018). In contrast, Autore (2011) finds bought deals incur higher underpricing. On the other hand, in a more recent study Rubalcava (2020) did not find a significant difference in underpricing between bought deals and marketed underwritten offers for Canadian cross-listed and non-cross-listed firms. All these studies also control for expected determinants.

Similar to underwriting fees, this study includes determinants of price discount for Canadian stock offers from relevant research studies. Specifically, the determinants of price discount considered here account for return volatility (Bae and Levy, 1990; Corwin, 2003; Altinkilic and Hansen, 2003; Kim and Shin, 2004; Pandes, 2010; Autore, 2011; Huang and Zhang, 2011; Kim and Masulis, 2012), gross offer revenues (Bhagat, Marr, and Thompson, 1985; Mola and Loughran, 2004), offer size (Corwin, 2003; Altinkilic and Hansen, 2003; Autore, 2011; Huang and Zhang, 2011; Kim and Masulis, 2012), firm size (Corwin, 2003; Huang and Zhang, 2011), pre-offer share price (Altinkilic and Hansen, 2003), share price run-up (Corwin, 2003; Pandes, 2010; Rubalcava, 2020), underwriter prestige (Safieddine and Wilhelm, 1996; Kim and Shin, 2004; Mola and Loughran, 2004; Kim, Palia and Saunders, 2010; Kim and Masulis, 2012), market volatility (Bhagat, Marr, and Thompson, 1985), information asymmetry (Corwin, 2003), inclusion of overallotment option (Lee, Lochhead, and Ritter, 1996), and intended use of offer proceeds (Rubalcava, 2016).-Major determinants included here, and their relation with underwriting fees and price discount are from previous research. This study includes limited number of determinants because of data availability. However, unlike most studies, this research distinguishes stock offers by underwriting method (bought deal, marketed underwritten offer). Thus, whether similar relation holds for each underwriting method for the pre- and post-CSOX periods is a topic worth exploring further. (The methodology section examines in detail the expected determinants included here.)

The purpose of this study is to answer the following research question. Are the determinants of equity issuance costs -underwriting fees and stock price discount - for Canadian bought deals (and marketed

underwritten offers) the same before and after Canadian SOX? Specifically, what are the determinants of each equity issuance cost for bought deals (and marketed underwritten offers), that are significant before and after the Canadian SOX? Findings will reveal the effect of CSOX on determinants of issuance costs for bought deals and marketed underwritten offers by Canadian firms.

DATA AND METHODOLOGY

The sample data for the analysis of determinants of underwritten fees and price discount includes 656 stock offers of Canadian firms listed on the Toronto Stock Exchange and not listed in other countries. The overall sample period is from 1999 to 2011 (pre-CSOX period: 1999-2005; post-CSOX period: 2006-2011). For comparative purposes, the overall sample includes similar subsample periods (pre-CSOX: 7 years, and post-CSOX: 6 years) with enough observations on each period to get reliable results. Due to data constraints, it covers up to the year 2011. The sample for both issuance costs -underwriting fees and offer price discount- is the same and its distribution is as follows: Bought deals are 120 and 450 for the pre- and post-CSOX periods, respectively. On the other hand, marketed underwritten offers are 55 and 31 for the pre- and post-CSOX periods, respectively. The source of data for bought deals and marketed underwritten offers is *FP Advisor* (https://fpadvisor.financialpost.com) and cross-checked on the System for Electronic Documents Analysis and Retrieval *(SEDAR* Canada). The data include underwriting fees of equity offerings, underwriting type (bought deal, marketed underwritten offer), lead underwriter(s), offer announcement and issue dates, offer price, offer size, gross proceeds, overallotment option, and intended use of equity offer. The Canadian Financial Markets Research Centre (*CFMRC*) is the source of market data. They include daily stock prices, bid-ask quotes, trading volumes, S&P/TSX value-weighted index, and monthly number of shares outstanding. Statistics Canada is the source for the Canadian monthly T-bill rate (a proxy for risk-free rate). The sample does not include data with errors or missing values.

Determinants of Underwriting Fees for Bought Deals and Marketed Underwritten Offers

The cross-sectional model showing the relation of underwriting fees on expected determinants is as follows:

$$Fees_i = a_0 + (a_1 + \delta_{LnGProceeds} DumPer2) LnGProceeds_i + (a_2 + \delta_{Price} DumPer2) Price_i + (a_3 + \delta_{LnME} DumPer2) LnME_i + (a_4 + \delta_{Beta} DumPer2) Beta_i + (a_5 + \delta_{RetVol}\, DumPer2) RetVol_i + \ldots + a_t DYearFinCrisis_{2007} + \cdots + a_{t+n} DYearFinCrisis_{2009} + \varepsilon_i \quad (1)$$

Equation (1) shows the effect on underwriting fees (*Fees*) of expected determinants, simultaneously for the pre-CSOX period (1999-2005) and post-CSOX period (2006-2011). The model applies for bought deals and marketed underwritten offers, respectively. The determinants are from relevant research studies from the literature review section. Because of data constraints, it includes proxies from selected determinants from those studies. Determinants identifiers and descriptions are as follows. *Fees* is the underwriting fee (also called gross spread or investment banking fee). The subscript *i* stands for stock offer for issuer *i*. *Fees* is a percent of gross offer revenues paid by the issuing company to the investment bank (or syndicate), which helps in marketing the equity issue to investors. *DumPer2* is a dummy variable that equals one for the post-CSOX period and zero for the pre-CSOX period (*DumPer1*). Coefficient estimates a_0, $a_1 \ldots a_{t+n}$ show the extent on *Fees* of each determinant. The indicator variable *DumPer2* interacts with expected determinants to capture the differential effect of each determinant on *Fees* for the pre-and post-CSOX periods, respectively.

LnGProceeds is the natural log of gross revenues and measures economies of scale (Smith, 1977). A negative relation between fees and gross proceeds is expected because the higher gross proceeds, the higher the monetary value earned by investment banks. Therefore, they will be able to afford charging lower fees. *Price* is the share price two days before the offer date. It measures issue distribution risk (Butler, Grullon, and Weston (2005). A negative relation between fees and price is expected because offers with low prices

are more difficult to sell than those with higher prices. *LnME* is the natural log of issuer's market equity and proxies for firm size (Hansen and Torregrosa, 1992). The expectation is of a negative relation between fees and firm size because larger firms are already consolidated and better known among investors than smaller firms. Therefore, investment banks will charge lower fees for larger firms because of the lower risk in placing the offer in the market than for smaller firms. *Beta* is the systematic risk of the issuer (Bhagat, Marr, and Thompson, 1985). *Beta* is the coefficient of the Canadian market risk premium estimated from an asset pricing model between daily excess returns of a Canadian issuer and the Canadian market risk premium to get the abnormal return around the announcement date of the equity offer. The expectation is of a positive relation between fees and *Beta* because offers with a higher beta are riskier (i.e., more sensitive to market variations) than those with lower beta. *RetVol* is the standard deviation of stock returns annualized daily for three months before the offer date. It proxies for stock volatility (Bae and Levy, 1990). Because of higher volatility the higher investment bank's risk, therefore, the higher fees.

LeadUnderwriter is the incremental number of stock offerings an investment bank acts as lead underwriter from the previous year. It measures underwriter reputation. The relation between underwriting fees and investment bank reputations is not clear, according to Calomiris and Tsoutsoura (2010). For example, studies showing higher underwriter reputation with lower underwriting fees are Pandes (2010), Jeon and Ligon (2011), and Fernando et al. (2015). On the other hand, Chemmanur and Fulghieri (1994) argue reputable underwriters charge higher fees because of their superior certification. The empirical results section will shed light on the effect of this determinant on *Fees*. *VolTO* is volume turnover, which is equal to the ratio of daily annualized share trading volume divided by the total number of outstanding shares. It measures stock liquidity (Butler, Grullon and Weston, 2005). A negative relation between fees and the ratio is expected because shares with higher liquidity are easier to sell by investment banks.

Dum0 to *Dum 4* are dummy variables that classify the intended use of the equity offer as follows: *Dum0 (*unknown), *Dum1* (working capital), *Dun2* (capital investment), *Dum3* (general corporate) and *Dum4* (debt reduction). The expected relation between underwriting fees and the intended use is unknown. $DYearFinCrisis_{\tau}$ is a dummy variable for each year of the financial crisis period (2007-2009). The coefficient estimates of the financial crisis dummy variables show these years' effect on underwriting fees. The expected relation between underwriting fees and these dummy years is unknown. ε_i is the error term and assumed to be independently and normally distributed; i.e., $\varepsilon_i \sim N(0,\sigma^2)$

Determinants of Price Discount for Bought Deals and Marketed Underwritten Offers

The cross-sectional model showing the relation of price discount on expected determinants is as follows.

$$\begin{aligned} PrDisc_i = \; & a_0 + (a_1 + \psi_{RetVol} DumPer2) RetVol_i \;\; \varepsilon_i i + (a_2 + \psi_{RelGProc} DumPer2) RelGProc_i \\ & + \big(a_3 + \;\; \psi_{RelOffer} DumPer2\big) RelOffer_i + (a_4 + \psi_{LnME} DumPer2) LnME_i \\ & + (a_5 + \psi_{Price}\, DumPer2) Price_i + \qquad \ldots + a_t DYearFinCrisis_{2007} + \cdots \\ & + a_{t+n} DYearFinCrisis_{2009} + \;\; \varepsilon_i \end{aligned} \tag{2}$$

Equation (2) includes the effect on price discount of expected determinant simultaneously for the pre- and post-CSOX periods, respectively. The determinants are from the literature review section on offer price discount. For conciseness, this section mention only the oldest bibliographic reference(s) for a specific determinant. The explanation of variables in equation (2) is as follows. $PrDisc_i$ is the offer price discount of issuer *i* in percent and equals the difference between its closing market price in the previous day and offer price next day, divided by the closing market price in previous day. The lower offer price serves as compensation to investors (mostly institutional investors) who showed interest and provided information about the potential demand of the stock offering before the issue date. This measure is for marketed underwritten offers only. Bought deals use a different price discount as in Narayanan, Rangan, and Rangan

(2004). Here, to calculate the offer price discount is by buying the stock at the offer price and selling it at (usually higher) closing price on the *offer day.* That is because, in bought deals, the stock offer is around the announcement date, which usually a price drop occur immediately afterwards, consistent with Myers and Majluf's (2004) adverse selection theory. (Under this theory, when a company announces a stock offering, investors assume an overvaluation of the stock, so they assess its value downwards, resulting in unfavorable market reaction.) Thus, this adapted measure of price discount is net of the information effect by the offer announcement. *DumPer2* is a dummy variable that equals one for the post-CSOX period and zero for the pre-CSOX period (*DumPer1*). Coefficient estimates a_0, $a_1 \ldots a_{t+n}$ show the portion effect on *PrDisc* of each determinant. The indicator variable *DumPer2* interacts with expected determinants to capture the differential effect of each determinant on *PrDisc* for the pre-and post-CSOX periods, respectively. *RetVol* is the standard deviation of daily annualized stock returns three months before the offer date. Proxy for return volatility (Corwin, 2003; Altinkilic and Hansen, 2003). The expectation is of a positive relation between return volatility and price discount because of share price uncertainty.

RelGProceeds is the offer gross revenue divided by the firm's market capitalization before the offer date. Mola and Loughran (2004) find a positive relation between the offer price discount and gross offer revenues because higher revenues suggest more liquidity unpredictability. However, Bhagat, Marr, and Thompson (1985) find a negative relation between issuing costs and offering proceeds because of economies of scale. The empirical results section explores which of these results will hold in our study. *Reloffer* is the ratio of offer size to total number of shares outstanding before the offer date. It measures price pressure (Corwin, 2003; Altinkilic and Hansen, 2003). These studies argue larger offers expect to show higher price discount because of higher price pressure before the shares offer date. *LnME* is the natural log of market equity of issuing company. Proxies for firm size (Corwin, 2003). Evidence exists that larger firms show lower discount because they involve less information asymmetry than smaller firms. Thus, the expectation is of a negative relation between firm size and offer price discount.

Price is the share price 2 days before the offer date (Altinkilic and Hansen, 2003). Low-priced stocks reflect more value doubt and placement risk than high-priced stock; therefore, expecting higher price discount for the former. *Runup* is the price run-up or cumulative abnormal return 25 days before the offer date. The abnormal return is from a regression between daily excess return of a Canadian issuer and the Canadian market risk premium around the equity offer date (Corwin, 2003). Price run-up may occur because the actual pre-offer value overestimates the fair value; therefore, these offers expect a higher price discount. *LeadUnderwriter* is the incremental number of stock offerings an investment bank acts as a lead underwriter from the previous year. It proxies for underwriter reputation or prestige (Safieddine and Wilhelm, 1996). Reputable underwriters certify the fair value of the offer, so investors need lower price discount. *DumOAO* is a dummy variable equal to one if the offer has an overallotment option and zero otherwise. An offer with an overallotment option suggests underpricing of the offer (Lee, Lochhead and Ritter, 1996); thus, the expectation is of a positive relation between price discount and *DumOAO.*

StdTSX is the standard deviation of daily annualized returns on the Canadian stock index (S&P/TSX) during three months before the offer date. It is a proxy for market unpredictability (Bhagat, Marr and Thompson, 1985); therefore, the higher the market unpredictability, the higher price discount. *Spread* is the bid-ask spread of the stock divided by the spread midpoint. It proxies for information asymmetry between issuers and investors (Corwin, 2003). The higher the spread, the higher the price discount as compensation for the offer information asymmetry. *Dum0* to *Dum4* are dummy variables that classify the intended use of the equity offer as described before. Similarly, *DYearFinCrisis* is a dummy variable for each financial crisis period year (2007-2009). And, ε_i is the error term assumed to be independently and normally distributed; i.e., $\varepsilon_i \sim N(0, \sigma^2)$

RESULTS AND DISCUSSION

Descriptive Statistics for Underwriting Fees of Bought Deals and Marketed Underwritten Offers

Table 1 shows the mean (median) underwriting fees of seasoned equity offerings (SEO) for bought deals and marketed underwritten offers for Canadian firms listed on the Toronto Stock Exchange. It includes number of SEO in brackets for the pre- and post-CSOX periods and the p-value of the difference in mean (median) fees. The mean (median) underwriting fees range between 4.75% (5.00%) and 4.82% (5.00%) for bought deals. It shows the mean and median underwriting fees of bought deals are not statistically different between pre- and post-CSOX periods, as displayed by their nonsignificant p-values (0.3318 and 0.1468, respectively). Interestingly, the number of bought deals increases significantly during the post-CSOX period (120 to 450). The mean (median) range of underwriting fees for marketed underwritten offers is between 5.16% (5.00%) and 5.32% (5.00%). Similar to the findings for bought deals, no significant difference in mean and median underwriting fees between pre- and post- CSOX periods exist for marketed underwritten offers (p-values are 0.3889 and 0.5086, respectively). Table also shows the number of marketed underwritten offers decreased significantly after CSOX. Overall, the results reveal CSOX did not show a significant impact on underwriting fees.

Table 1: Mean (Median) Underwriting Fees for Bought Deals and Marketed Underwritten Offers

	Bought Deals			**Marketed Underwritten Offers**		
	Pre-CSOX	**Post-CSOX**	**P-value Diff. Mean (Median)**	**Pre-CSOX**	**Post-CSOX**	**P-value Diff. Mean (Median)**
No. of SEO	[120]	[450]		[55]	[31]	
Mean	4.75%	4.82%	0.3318	5.16%	5.32%	0.3889
(Median)	(5.00%)	(5.00%)	(0.1468)	(5.00%)	(5.00%)	(0.5086)

This table shows the mean (median) underwriting fees for bought deals and marketed underwritten offers of Canadian firm listed on the Toronto Stock Exchange, during the pre- and post-CSOX periods, respectively. Number of stock offers is in brackets. Two-tailed t-test is used to test for the difference in means and Wilcoxon/Mann-Whitney test for the difference in medians.

Determinants of Underwriting Fees for Bought and Marketed Underwritten Offers: Pre- vs Post-CSOX Period

This section presents regressions results of underwriting fees (*Fees*) on expected determinants for bought deals and marketed underwritten offers for the pre- and post-CSOX periods from equation (1). The coefficient estimates reported in Regressions 1 to 4 consider the effect of dummy *DumPer2* (i.e., *post-CSOX period- DumPostCSOX)* or *DumPer1 (i.e., pre-CSOX period -DumPreCSOX)* on *Fees* for each determinant. This section does not show the coefficients of these interacting dummies to save space. Table 2 presents only coefficient estimates showing net effects on *Fees* for the pre- and post-CSOX periods, respectively. In the table, asterisks ***, ** and * stand for significance at one, five and ten percent levels, respectively. (Note: This and following sections define statistical significance of coefficient estimates as follows: highly significant (***), significant (**), and slightly significant (*)).

For illustrative purposes, the section presents the effect of *DumPer2* for *LnGProceeds* (natural log of gross proceeds) on bought deals. The procedure of getting coefficient estimates is as follows. In Regression 1, the coefficient estimate (-0.4674) of *LnGProceeds* for the pre-CSOX period is a_1 in equation (1) where the interactive dummy *DumPer2* is *DumPostCSOX.* Since equation (1) calculates simultaneously the effect on *Fees* for the pre- and post-CSOX periods, the coefficient estimate (-0.1108) of *LnGProceeds* in Regression 2 is the sum of coefficients a_1 and interactive dummy $\delta_{LnGProceeds}$*DumPer2* or $\delta_{LnGProceeds}$*DumPostCSOX (i.e.,* -0.4674 plus 0.3566, unreported) from Regression 1.

Alternatively, in Regression 2, the coefficient estimate (-0.1108) of *LnGProceeds* for the post-CSOX period is $a_1$in Regression 2, where the interactive dummy is *DumPer1 (or DumPreCSOX).* Thus, the coefficient estimate (-0.4674) of *LnGProceeds* in Regression 1 for the pre-CSOX period is the sum of coefficients a_1 and interactive dummy $\delta_{LnGProceeds}$ **DumPer1* or $\delta_{LnGProceeds}$ **DumPreCSOX (i.e.,* -0.1108 minus 0.3566, unreported) from Regression 2. (The sections of empirical results does not report coefficients of these interacting dummies to save space.) In other words, the coefficient estimates a_1 in Regressions 1 and 2 report directly the net effect of *LnGProceeds* on *Fees* for bought deals for the pre- and post-CSOX periods, respectively. (Notice that coefficient estimates of Regressions 1 and 2 are from equation 1, which includes 570 stock offers, including the pre- and post-CSOX periods; therefore, they have the same adjusted R square value of 0.503).

A similar procedure follows for marketed underwritten offers for the pre- and post-CSOX periods, respectively. Regression 1 to 4 show that *LnGProceeds* is the only significant determinant during the pre- and post-CSOX periods for bought deals and marketed underwritten offers, respectively. In addition, the negative coefficient signs of *LnGrossProceeds* show underwriting fees decrease with gross-proceeds (standing for economies of scale), which is consistent with similar findings from previous studies. Interestingly, the coefficient estimate of *LnGrossProceeds* for bought deals is less negative during the post-CSOX period (-0.1108) and for marketed underwritten offers is more negative (-0.5868).

Other significant determinants during the pre- and post-CSOX periods are *Beta* and *RetVol for* bought deals only. For example, the coefficient of *Beta* for the post-CSOX period is positive and highly significant (0.1248); this says that *Fees* increase with systematic stock risk as in Bhagat, Marr, and Thompson (1985). However, the pre-CSOX period is negative and significant (-0.1969), which shows that *Fees* increase with lower systematic risk, which is counterintuitive. On the other hand, the coefficient estimate of *RetVol* is positive and highly significant for pre-CSOX period (1.1830) and positive and highly significant for post-CSOX period (0.7204). This says that *Fees* increase with stock return volatility (slightly less for the post-CSOX period), consistent with prior research studies The coefficient estimate of *Price* is negative and slightly significant for the pre-CSOX period for bought deals (-0.0111 in Regression 1). This says that high-priced stocks represent low distribution risk and, therefore, lower fees. Coefficient estimate of *LnME* is negative and significant for the post-CSOX period for bought deals (-0.2156), and negative and significant in the pre-CSOX period (-0.2968) for marketed underwritten offers (Regression 3). Results show *Fees* decrease with firm size, which supports previous studies. This is because offers of larger, more known firms are easier to sell than those of smaller, less known firms. The coefficient estimate of *LeadUnderwriter* is positive and highly significant in the pre-CSOX period for bought deals (0.0374 in Regression 1). Finding positive relation between *Fees* and *LeadUnderwriter* supports the underwriting certification hypothesis of Chemmanur and Fulghieri (1994). And the coefficient estimate of share turnover (*VolTO)* is negative and significant (-0.0521) for bought deals in the post-CSOX period only (Regression 2). This supports Buttler, Grullon and Weston (2005), who argue that more liquid stocks are easier to place in the market -involving less distribution risk by investment banks- than those less liquid.

The coefficients of dummy variables *Dum1* (working capital), *Dum2* (capital investment), and *Dum3* (general corporate) are positive and significant in the post-CSOX period for bought deals (Regression 2). This says *Fees* increase if the intended use of funds is working capital, capital investment, and general corporate. On the other hand, the coefficient estimates of dummies *Dum1* to *Dum4* for marketed underwritten offers are all negative (Regression 4). These results show underwriting fees decrease if the intended use of funds is working capital, capital investment, general corporate and debt reduction, contrary to the findings for bought deals. A possible explanation of the difference in signed coefficients, is that for marketed underwritten offers, underwriters have more time to assess issuers' intention use of funds, which they may find more credible compared with those for bought deals, which they may not. This is because in bought deals, the time from the offer announcement to the issue date is significantly shorter (i.e., less time to evaluate issuers' intended use of funds). Therefore, underwriters are likely to charge higher fees for

bought deals and lower fees for marketed underwritten offers. The effect of financial crisis years (2007-2009) on *Fees* is as follows. For bought deals, the coefficient is negative and significant for 2009 (-0.1410, p-value of 0.0494 -unreported). On the other hand, it is positive and highly significant for 2007 (0.9098, p-value of 0.0071 -unreported) for marketed underwritten offers. Thus, results show the years of the financial crisis had different effects on *Fees* for bought deals and marketed underwritten offers.

Table 2: Regressions of *Fees* on Expected Determinants for Bought Deals and Marketed Underwritten Offers: Pre- and Post-CSOX Periods

	Bought Deals		**Marketed Underwritten Offers**	
Variables	**Pre-CSOX 1**	**Post-CSOX 2**	**Pre-CSOX 3**	**Post-CSOX 4**
Constant	1.1983***	1.0478**	1.7672***	1.0672***
lnGProceeds	-0.4674***	-0.1108***	-0.4046***	-0.5868***
Price	-0.0111*	-0.0047	-0.0068	-0.0139
LnME	0.0364	-0.2156**	-0.2968**	0.2395
Beta	-0.1969**	0.1248***	0.1457	-0.3348
RetVol	1.1830***	0.7204***	0.0205	1.5532
LeadUnderwriter	0.0374***	0.0029	0.0028	-0.0121
VolTO	0.0512	-0.0521**	0.0727	-0.0438
Dum1	0.0359	0.0530***	0.0455	-0.7154**
Dum2	-0.0020	0.0375***	0.0519*	-0.6790**
Dum3	0.0043	0.0275*	0.0029	-0.6738**
Dum4	-0.0355*	0.0191	0.0240	-0.6469*
DYearFinCrisis	--	Yes	--	Yes
R^2	0.526	0.526	0.758	0.758
R^2 Adj.	0.503	0.503	0.657	0.657
No. of SEO	570	570	86	86

This table reports coefficient estimates from regressions of underwriting fees (Fees) of Canadian bought deals and marketed underwritten offers on expected determinants, for the pre- and post-CSOX periods, respectively. Regression model is $Fees = a_0 + (a_1 + \delta_{LnGProceeds}DumPer2)LnGProceeds_i + (a_2 + \delta_{Price}DumPer2)Price_i + (a_3 + \delta_{Beta}DumPer2)Beta_i + (a_4 + \delta_{RetVol}DumPer2)RetVol_i + \ldots + a_tDYearFinCrisis_{\tau=2007} + \ldots + a_{t+n}DYearFinCrisis_{\tau=2009} + \varepsilon_i$. *The coefficient estimates for the Constant, RetVol, Dum1 to Dum4 are multiplied by* 10^{-1}. *VolTO is multiplied by* 10^2. *The section Determinants of Underwriting Fees for Bought Deals and Marketed Underwritten Offers defines Fees and expected determinants. The asterisks ***, ** and * stand for significance at the 1, 5 and 10 percent levels.*

In summary, *LnGProceeds* (a proxy for economies of scale) is the only common and significant determinant for the pre- and post-CSOX periods for bought deals and marketed underwritten offers. *RetVol* (proxy for return volatility) is the common determinant in pre- and post-CSOX periods for bought deals only. On the other hand, no other common determinants exist in pre-and post-CSOX periods for bought deals and marketed underwritten offers. Overall, results reveal CSOX had a different effect on determinants of underwriting fees of stock offers.

Descriptive Statistics for Offer Price Discount of Bought Deals and Marketed Underwritten Offers

Table 3 reports the mean (median) offer price discount for bought deals and marketed underwritten offers for Canadian issuers. It includes number of seasoned equity offers (SEO) in brackets for the pre- and post-CSOX periods and p-value of the difference in mean (median) fees. It shows the mean (median) price discount for bought deals range between 3.84% (2.96%) and 4.00% (3.34%). Table also shows the difference in mean and median offer price discount of bought deals is not statistical different between pre- and post-CSOX periods (p-value of 0.7505 and 0.7667, respectively). The mean (median) range of offer price discount for marketed underwritten offers is between 3.63% (1.84%) and 5.85% (4.53%). It shows the median price discount of marketed underwritten offers is higher for the post- than in the pre-CSOX period at a 0.05 significance level. However, the p-value of the difference in means between pre- and post-CSOX periods shows no statistical significance (p-value of 0.1592). In sum, CSOX did not significantly affect price discount for bought deals and marketed underwritten offers.

Table 3: Mean (Median) Offer Price Discount for Bought Deals and Marketed Underwritten Offers

	Bought Deals			Marketed Underwritten Offers		
	Pre-CSOX	**Post-CSOX**	**P-value Diff. Mean (Median)**	**Pre-CSOX**	**Post-CSOX**	**P-value Diff. Mean (Median)**
No. of SEO	[120]	[450]		[55]	[31]	
Mean	4.00%	3.84%	0.7505	3.63%	5.85%	0.1592
(Median)	(3.34%)	(2.96%)	(0.7667)	(1.84%)	(4.53%)	(0.0196)**

*This table shows the mean (median) offer price discount for bought deals and marketed underwritten offers of Canadian firms listed on the Toronto Stock Exchange, during the pre- and post-CSOX periods, respectively. Number of stock offers is in brackets. The asterisks ** stands for significance at the 5 percent level. Two-tailed t-test is used to test for the difference in means and Wilcoxon/Mann-Whitney test for the difference in medians.*

Determinants of Offer Price Discount for Bought and Marketed Underwritten Offers: Pre- vs Post-CSOX Period

This section reports regressions results of offer price discount (underpricing) on expected determinants for bought deals and marketed underwritten offers for the pre- and post-CSOX periods from equation (2). Coefficient estimates shown in Regressions 1 to 4 consider the effect of the interactive dummy *DumPer2* (i.e., *DumPostCSOX* for post-CSOX period) or *DumPer1* (i.e., *DumPreCSOX* for pre-CSOX period*)* on *price discount (PrDisc)* for each determinant. The section does not show coefficients of these interacting dummies to save space. Table 4 presents only coefficient estimates showing the net effect on *PrDisc* for the pre- and post-CSOX periods, respectively (similar to the section of Determinants of Underwriting Fees examined previously). As an illustration, this section presents the effect of *DumPer2* and *DumPer1* for determinant *RetVol* of bought deals. The procedure to get coefficient estimates is as follows. In Regression 1, the coefficient estimate (1.1782) of *RetVol* for the pre-CSOX period is $a_1$in equation (2), where the interactive dummy *DumPer2* is *DumPostCSOX. S*ince equation (2) calculates simultaneously the effects on *PrDisc* for pre- and post-CSOX periods, the coefficient estimate (0.2856) of *RetVol* in Regression 2, is the sum of coefficients a_1 and ψ_{RetVol} of *DumPostCSOX* (i.e., 1.1782 minus 0.8926, unreported) from Regression 1. To put it differently, in Regression 2, the coefficient estimate (0.2856) of *RetVol* for the post-CSOX period is $a_1$in Regression 2, where the interactive dummy is *DumPer1 (i.e., DumPreCSOX).* Thus, the coefficient estimate (1.1782) of *RetVol* in Regression 1 is the sum of coefficients a_1 and $\psi_{RetVol}$of *DumPreCSOX* (i.e., 0.2856 plus 0.8926, unreported) from Regression 2. To put it simply, coefficient estimates a_1 in Regressions 1 and 2 show directly the net effect of *RetVol* on *PrDisc* for bought deals for the pre-CSOX and post-CSOX periods, respectively.

A similar procedure follows for marketed underwritten offers. From Regressions 1 to 4, the significant coefficients of *RetVol* are for bought deals only. None of the coefficients of *RetVol* are significant for marketed underwritten offers (Regressions 3 and 4). The positive coefficient signs of *RetVol* say the offer price discount increases with stock return volatility (meaning price unpredictability), which is consistent with similar findings from previous studies (e.g., Corwin, 2003; Kim and Masulis, 2012). This subsection starts examining another determinant (*Spread*) that is significant in both the pre- and post-CSOX periods. Then, it continues with other determinants that are significant in only one period (i.e., pre-CSOX or post-CSOX). The coefficient estimate of *Spread* for bought is positive and slightly significant in the pre-CSOX period (1.0732, Regression 1) and positive and significant in the post-CSOX period (0.9486, in Regression 2). However, the coefficient estimate of *Spread* for marketed underwritten offers is positive and significant (2.1276) in the pre-CSOX period only (Regression 3). Since *Spread* is a proxy for information asymmetry (between company and investors), the expectation is a positive relation between *PrDisc* and *Spread* as in Corwin (2003). The coefficient estimate of *RelGProceeds* is negative and significant (-2.4532) for the post-CSOX period for bought deals (Regression 2), consistent with economies of scale by Bhagat, Marr, and Thompson (1985). However, the coefficient for same determinant is positive and slightly significant (1.7157, in Regression 3), supporting Mola and Loghran (2004). They argue a positive relation is more likely because sizeable gross proceeds suggest more liquidity unpredictability, and therefore, a higher price

discount. The coefficient estimate of *RelOffer* for bought deals is positive and highly significant (2.4242) in the post-CSOX period (Regression 2). This finding supports the price pressure hypothesis of Corwin, 2003) and Altinkilic and Hansen (2003). The coefficient of *Price* is negative and significant (-0.1064) for bought deals in the pre-CSOX period only (Regression 1).

Table 4: Regressions of Offer Price Discount on Expected Determinants for Bought Deals and Marketed Underwritten Offers: Pre- and Post-CSOX Periods

	Bought Deals		**Marketed Underwritten Offers**	
Variables	**Pre-CSOX 1**	**Post-CSOX 2**	**Pre-CSOX 3**	**Post-CSOX 4**
Constant	-2.4875*	-0.8140	-0.8289	4.0825
RetVol	1.1782***	0.2856**	-0.1331	-0.6423
RelGProceeds	-0.2004	-2.4532**	1.7157*	1.5505
RelOffer	0.1845	2.4242***	-0.5885	-2.4307
LnME	1.4937**	0.4063	0.3773	-2.5929
Price	-0.1064**	-0.0297	-0.0470	-0.1818
Runup	0.3100	0.0644	0.9915*	-0.7305
LeadUnderWriter	-0.1405	-0.0401	-0.4174**	-0.0194
DumOAO	2.1222	1.3560***	-2.3416	-1.9496
StdTSX	-2.2004	0.7448	-4.3938*	18.8252***
Spread	1.0732**	0.9486***	2.1276**	0.8161
Dum1	-0.1982	0.02060	8.8245**	5.0199
Dum2	-0.1419	0.0935	8.9711**	5.4775
Dum3	-0.3310*	0.0846	0.7876	5.4313
Dum4	-0.2149	0.0419	0.5793	5.4909
DYearFinCrisis	--	Yes	--	Yes
R^2	0.204	0.204	0.546	0.546
R^2 Adj.	0.156	0.156	0.285	0.285
No. of SEO	570	570	86	86

This table reports coefficient estimates from regressions of offer price discount (PrDisc) of Canadian bought deals and marketed underwritten offers on expected determinants, for the pre – and post-CSOX periods, respectively. The regression model is $PrDisc_i = a_0 + (a_1 + \psi_{RetVol}DumPer2)RetVol_i + (a_2 + \psi_{RetGProc}DumPer2)RelGProc_i + (a_3 + \psi_{RelOffer}DumPer2)RelOffer_i + (a_4 + \psi_{LnMe}DumPer2)LnME_i + \ldots + a_tDYearFinCrisis_{\tau=2007} + \ldots + a_{t+n}DYearFinCrisis_{\tau=2009} + \varepsilon_i$. *The section Determinants of Price Discount for Bought Deals and Marketed Underwritten Offers defines PrDisc and expected determinants. The coefficient estimates for the Constant, RelGPrceeds, Reloffer, Runup, and Dum1 to Dum 4 are multiplied by* 10^{-1}. *Coefficient estimates for RetVol, RelGProceeds, Reloffer, StdTSX, and Spread are multiplied by* 10^{-2}. *The asterisks ***, ** and * stand for significance at the 1, 5 and 10 percent levels.*

This says that high-priced stocks reflect less value unpredictability and lower price discount (Altinkilic and Hansen, 2003). The coefficient estimate of *Runup* is positive and slightly significant (0.9915) in the pre-CSOX period for marketed underwritten offers (Regression 3). This is in line with Corwin (2003), who asserts pre-offer price run-up suggests stock overvaluation, which is in line with a positive relation with price discount. On the other hand, the coefficient of *LeadUnderwriter* is negative and significant (-0.4174) for marketed underwritten offers during the pre-CSOX period. The negative coefficient supports the underwriter certification argument by Safieddine and Wilhelm (1996). In other words, the price discount is decreasing with increasing reputation of the underwriting investment bank. Finally, the coefficient estimate of *DumOAO* is positive and highly significant (1.3560) for bought deals in the post-CSOX period (Regression 2), as in Lee, Lochhead and Ritter (1996). A coefficient estimate with no consistency in sign is for *StdTSX* (a proxy for market uncertainty) of marketed underwritten offers. Its coefficient estimate is -4.3938 (unexpected sign) in pre-CSOX period (Regression 3) and 18.8252 (expected sign) in post-CSOX period (Regression 4). The expectation is that offer price discount increases with market volatility, which only holds for the post-CSOX period. On the other hand, the coefficient estimates for *Dum1* (working capital) (8.8245) and *Dum2* (capital investment) (8.9711) are positive and significant for marketed underwritten offers in the pre-CSOX period only (Regression 3). This shows the offer price discount increases with working capital and capital investment as the intended use of funds. The coefficient of *Dum3* for bought deals is negative and slightly significant (-0.3310) in the pre-CSOX period (Regression 1). This means the offer price discount decreases if the purpose of funds is general corporate. The coefficient

estimates (unreported) of dummy variables that account for financial crisis years (2007-2009) were not significant. This reveals that none of these years had an impact on price discount for seasoned equity offerings of bought deals and marketed underwritten offers.

To sum up this section, *RetVol* (stock return volatility) and *Spread* (a proxy for information asymmetry) are the only significant determinants of offer price discount for the pre and post-CSOX periods, but only for bought deals. On the other hand, the determinants with coefficient estimates consistent with expected signs from previous research studies are *RelGProceeds*, *RelOffer*, *Price*, *Runup*, *LeadUnderwriter* but not consistency in significance across offer types and CSOX periods. Unexpectedly, *StdTSX* (stock market volatility) shows a coefficient estimate with an alternating sign for marketed underwritten offers in the pre- and post-CSOX periods. Overall, these results show that, except for *RetVol* and *Spread*, no consistent determinant of offer price discount exists for the pre – and post-CSOX periods for either bought deals or marketed underwritten offers.

SUMMARY AND CONCLUSION

Research evidence on determinants of equity issuance costs of public stock offerings such as underwriting fees and offer price discount is extensive. This manuscript aims to find out whether the determinants of underwriting fees and price discount for Canadian equity offerings changed after the passage of Canadian SOX. This is an essential piece of legislation equivalent to U.S. Sarbanes-Oxley passed in 2002. The Canadian law became effective in 2005. Both laws have had a significant impact on the corporate governance of publicly traded companies. They have improved transparency, quality of financial information, including proper disclosure of equity offerings. Their main objective is to protect investors against corporate wrongdoing and result in more efficient capital markets. The research question of this study is, did the Canadian legislation have a significant effect on determinants of equity issuance costs of Canadian stock offers? Specifically, were determinants that are significant in the pre-CSOX period also significant after CSOX? This paper tries to answer this question by examining determinants of underwriting fees (and offer price discount) of Canadian bought deals and marketed underwritten offers. These are two typical methods of choice that Canadian companies can choose when issuing stocks. The sample includes 656 seasoned equity offers of companies listed on the Toronto Stock Exchange.

From eleven different determinants of underwriting fees, findings show gross offer proceeds (*LnGProcceds*) is the only significant determinant in the pre- and post-CSOX periods for both bought deals and marketed underwritten offers. Stock return volatility (*RetVol*) is significant during the pre- and post-CSOX periods for bought deals only. On determinants of offer price discount, from fourteen different determinants, stock return volatility (*RetVol*) and *Spread* are the only significant determinants for the pre- and post-CSOX periods for bought deals only. Marketed underwritten offers do not show consistent determinants for the pre- and post-CSOX periods. In general, findings reveal that a significant determinant in one period does not ensure the same determinant will be significant in a different period. This is mainly if the period is after the passage of a crucial law such as the Canadian SOX. Due to data constraints, this study did not consider many determinants used in previous research. It uses the most common across various studies. Nevertheless, the analysis is robust because it uses the exact determinants of underwriting fees (and price discount) for bought deals and marketed underwritten offers for the pre and post-CSOX periods. Whether missing determinants not included in this study could have been consistently significant for the pre – and post-CSOX periods are subject to further empirical evidence

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