

**Market effects associated with different financial restatements announcement
strategies by Canadian firms**

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Abstract

Market effects associated with different financial restatements announcement strategies by Canadian firms

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Canadian firms generally use one of two different announcement strategies when they detect the possible need to issue financial restatements; namely: single-announcement restatements (directly uploading and disclosing the financial restatements) and multiple-announcement restatements (initially announcing the possibility of accounting problems through press releases or firm reports before the later issue of the final restatements). We find that error-related single-announcement financial restatements are associated with significant negative market impacts in a two day event window $[0, +1]$. The median idiosyncratic volatility associated with error-related single-announcement restatements increases significantly following the announcements. For multiple-announcement restatements we observe significant market impacts at the intention announcement day and additional market impacts prior to but not on the official restatement dates. In the in-between period after the intention to restate is announced, bid-ask spreads increase and trading volumes, trading values and the idiosyncratic volatilities decrease significantly. After the official restatement is announced, trading volumes, trading values and idiosyncratic volatilities increase significantly. We observe higher total market impacts for multiple versus single announcement financial restatements.

Keywords: financial restatement, market impact, idiosyncratic volatility, bid-ask spreads, trading volumes, trading values

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1. INTRODUCTION

Financial restatements may convey information to investors about a firm's expected cash flows and about the uncertainty or quality of those future cash flows based on the perceived quality of their corporate governance (Kryzanowski and Zhang, 2013b). Restatement types include those that are error-related or are due to a change in accounting regulations or are due to specific events such as discontinued operations, stock splits, stock dividends, and M&As. Previous research focuses mainly on error-related restatements because the other two types of restatements are perceived as being the result of the regular operations of companies. Various sources of agency problems (such as managerial compensation and earnings manipulation) can be the triggers for error-related financial misstatements (Richardson *et al.*, 2002; Burns and Kedia, 2006; Efendi *et al.*, 2007; Burns *et al.*, 2010; Ettredge *et al.*, 2010; and Zhang, 2012).

In this research we examine the market effects of announcements for the three types of financial restatements during the 2007-2013 period for firms listed on the TSX and TSX-V. We find significant mean price effects for two-day announcement windows [0, +1] only for error-related financial restatements. The mean price effects of -0.45 percent and -5.89 percent for TSX and TSX-V listed firms, respectively, are consistent with those reported in previous studies, which range from -4% to -12% depending on their type (e.g., Dechow *et al.*, 1996; Turner *et al.*, 2001; Anderson *et al.*, 2002; Wu, 2002; Palmrose *et al.*, 2004). We also find that the three types of Canadian restatements have no significant effects on bid-ask spreads, trading volumes and trading values. The spread results are consistent with the findings of Palmrose *et al.* (2004) and Kryzanowski and Zhang (2013a) for revenue-recognition restatements.

Not all restatement announcements are single events. When companies suspect that they may need to restate, they may initially announce the possibility of accounting problems through press releases or firm reports and may adopt a series of investigations before they issue a press release

detailing the final restatement results (Scholz, 2008). Schmidt and Wilkins (2012) also find that companies with more financial experts on the audit committee have shorter in-between periods (referred to as the dark period in their period), but only when such financial expertise relates specifically to accounting. Since the first announcement of a possible restatement only provides incomplete information to investors, we make an initial test of the market effects of intention announcements. We find a significant negative impact of -2.87 percent for the two-day window [0, +1] for intention announcements. Since market uncertainty may remain until the issue of the official restatement press release, we examine market behavior between these two announcements, which we refer to as the in-between period. During the in-between period, bid-ask spreads increase and trading volumes, trading values and idiosyncratic volatilities decrease. We also find a further significantly negative impact of -3.42 percent during the in-between period. On the day upon which full restatement information is released, we find no significant price effects although trading volumes, trading values and idiosyncratic volatilities significantly increase. We find significantly greater cumulative price effects associated with multiple versus single announcement financial restatements.

2. LITERATURE REVIEW

2.1 Financial Restatement Announcement Process

Scholz (2008) describes the various steps that may occur in the public disclosure of a financial restatement. The announcement process may begin with the announcement of actual or potential accounting problems in a press release or companies' current report and conclude with the release of the amended results. She points out that the time elapsed during this announcement period will vary significantly because companies might adopt investigations and updates during the interim periods. However, in her examination of the market impact of financial restatements,

Scholz (2008) examines the combined effect of all announcements in the announcement process and not the individual announcements.

2.2 Likelihood to Financial Restate

2.2.1 Likelihood to financial restate: U.S. evidence

Normally a publicly traded firm restates its financial statements if the previous statements contain material errors. Richardson *et al.* (2002) find that firms with high market expectations for future growth in earnings and with higher levels of outstanding debt are more likely to restate. They argue that companies are motivated to adopt aggressive accounting policies mainly due to capital market pressures.

Thompson and Larson (2004) find that larger firms are more likely to financially restate than smaller firms. In contrast, Turner and Weirich (2006) report that small firms are twice as likely to restate as big firms, and that companies audited by small audit firms are six times as likely to announce restatements as companies audited by the Big Four. Aggregate institutional ownership is positively related to the likelihood and severity of misreporting (Burns *et al.*, 2010). Also, managers may take actions to support the stock price when the stock is substantially overvalued (Efendi *et al.*, 2007).

According to Burns and Kedia (2006), CEO compensation packages, especially the option component, can significantly influence the adoption of aggressive accounting behaviour which can lead to subsequent financial restatements. Harris and Bromiley (2007) report support for the theory that pressures from executive inducements and poor firm performance can cause firms to act unethically. Ettredge *et al.* (2010) also argue that intentional earnings management can lead to restatements. Baber *et al.* (2012) show that the relation between the probability of restatement and governance measures are statistically significant only when interactions between internal and external governance measures are considered as both main effects and interactions.

2.2.2 Likelihood to financial restate: Canadian evidence

While Canada has similar regulatory principles to the U.S. (Nicholls, 2006; King and Santor, 2008), the majority of Canadian public firms are concentrated in a few industries (such as natural and energy resources) and are controlled by families. Kryzanowski and Zhang (2013b) argue that the market and other effects of Canadian restatements due to SOX may differ from that for U.S. restatements due to different roots (e.g., more concentrated ownership and smaller size) and different routes (principle- versus rule-based regulation). Anand *et al.* (2012) find that Canadian firms, even if they are not cross-listed in the U.S., are more willing to adopt U.S. standards such as SOX. According to Nicholls (2006) and Ben-Ishai (2008), a number of regulatory principles have been placed in practice in Canada in response to SOX to enhance corporate governance for Canadian firms.

Kryzanowski and Zhang (2013b) document that Canadian companies are less likely to restate if they have bigger blockholder and management ownerships, audit committees with at least one director with financial expertise, a lower leverage ratio, and a big 5 auditor. They also find that the likelihood of a financial restatement is not significantly related to the proportion of unrelated directors and whether CEOs are in the chair position of the board or are from the founding family. Moreover, in contrast to Burns and Kedia (2006) and Harris and Bromiley (2007), Zhang (2012) finds that the higher sensitivity of option values (total, vested and unvested), and in-the-money-stocks and long-term incentive payouts of top executives, CEOs and CFOs does not significantly affect the likelihood of restatements by Canadian firms. But for top executives, CEOs and CFOs, the motivations from restricted stock are associated with the size of restatements and the higher CFO equity holdings are associated with larger restatements.

2.3 Consequences of Financial Restatements

2.3.1 Consequences of financial restatements: US evidence

According to Callen *et al.* (2006), restatements are associated with negative market reactions since the restatements may reveal information that: 1) causes a downward revision of future cash flow prospects; 2) exposes weak accounting management and even managerial problems in the restating firms; and 3) signals that the opportunistic behavior of managements who may enhance profits from not only aggressive accounting but through illegal means.

Restatement announcements are associated with, on average, negative price impacts ranging from -4 percent to -12 percent depending on their type (e.g., Dechow *et al.*, 1996; Turner *et al.*, 2001; Anderson *et al.*, 2002; Wu, 2002; Palmrose *et al.*, 2004). Palmrose *et al.* (2004) find that firms restating more material misstatements suffer more severe price reactions. Hennes *et al.* (2008) report that restatements correcting irregularities are associated with a 14 percent negative price impact while restatements correcting errors are associated only with a 2 percent negative price impact. Anderson and Yohn (2002) find that markets react more negatively to restatements involving revenue recognition problems than other reporting errors. Moreover, Gleason *et al.* (2008) find that financial restatements, especially for revenue recognition, that adversely may influence shareholder wealth at the restating firm also lead share prices to decrease among non-restating firms in the same industry. In contrast, Callen *et al.* (2006) report that income-increasing restatements due to errors or changes in accounting principles are not associated with significant price impacts. Furthermore, the firms with higher levels of transient institutional ownership have more severe price impacts due to the restatements (Hribar *et al.*, 2004). Gordon *et al.* (2008) document that disclosure credibility, which is defined as believability of the disclosures to broadly encompass its fairness of representation from an investor's perspective, is an important determinant of market reactions to restatements. Wilson (2008) finds that the duration of the loss is larger for revenue recognition errors by restating firms. He also finds

support for the conjecture that short-term declines in the confidence of investors follow the restatements.

The 2002 Sarbanes-Oxley Act (SOX), which set new or enhanced standards in the U.S. for financial reporting and control, increased the number of financial restatements. If SOX increased the responsibilities of management in financial reporting, Burks (2007, 2010) argues that post-SOX financial restatements should be associated with significantly less negative returns than pre-SOX financial restatements. Hranaiova and Byers (2007) report that the negative influence of restatements is reduced by 71 percent in the post- versus pre-SOX period. Furthermore, the volatility of post-announcement abnormal returns was significantly lower in the post-SOX period.

Griffin (2003) finds that the number of analysts covering a firm declines significantly in the first month after a corrective disclosure, and that analysts are more likely to lower their predictions associated with such bad news in the first half of the year. Li and Zhang (2006) find net insider selling in the pre-restatement period, little net insider selling immediately around the restatements and net insider buying in the post-restatement period. This behavior suggests that insiders can trade on information to be revealed in forthcoming restatements by avoiding allegations of improper behavior.

Hribar and Jenkins (2004) find that restatements are associated with subsequent decreases in expected future earnings and increases in the cost of equity capital. Hirschey *et al.* (2003) detect a statistically significant post-earnings announcement drift following restatements which they attribute to investor under-reaction following the restatements.

Chen *et al.* (2014) find that in the year following the restatement announcements, the announcing of financial statements from companies associated with negative market reactions to

the restatements become more conservative and the market reactions following restatement announcements are getting more severe. Chi and Sun (2014) find a negative relationship between the probability of financial statement reoccurrence and (1) auditor changes to a Big 4 auditor, (2) replacements of CEO/CFO, and (3) improvements in internal controls. Amel-Zadeh and Zhang (2014) find that firms that recently filed financial restatements are significantly less likely to become takeover targets than a propensity score matched sample of non-restating firms and that the takeover bids to those restating firms are more likely to be withdrawn or take longer to complete. They attribute these findings to the information risk associated with restating companies. Ettredge *et al.* (2013) find that the executives of restating firms exhibit risk-averting forecasting behaviors post-restatement.

Graham *et al.* (2008) find that restating firms normally pay more upfront and annual fees in loan contracts and have a reduced possible supply of lenders. Not surprisingly, they find that the negative impact on the loan spread is higher if a restatement is due to fraudulent activity. Park and Wu (2009) find significant negative abnormal loan returns and increased bid-ask spreads around restatements and that the secondary loan market exhibits superior informational efficiency compared to the stock market in reflecting the restatement information.

Because financial restatements are a type of accounting information disclosure, some scholars examine the behavior of the bid-ask spreads around a financial restatement. Unlike Palmrose *et al.* (2004) who find no significant change in bid-ask spreads around financial restatements, Anderson and Yohn (2002) find a significant increase in spreads for revenue-recognition restatements.

2.3.2 Consequences of financial restatements: Canadian evidence

Kryzanowski and Zhang (2013a) document that the expected future cash flows and their uncertainty are diminished and increased respectively due to financial restatements by Canadian

companies during the period of 1997 to 2006. They find that restatements associated with revenue recognition and company-initiated restatements generate larger price impacts, which are more severe if the firms also are cross-listed in the U.S. Announcements of revenue recognition restatements increase total residual volatility, its information-based permanent component and its adverse selection spread component. Relative spreads are also enhanced by financial restatements but they are comparatively lower for the firms cross-listed in the U.S.

Kryzanowski and Zhang (2013b) also report that the turnover of the CEO, President, CFO and external auditor is higher compared to their control firms in the two years following a restatement.

3. SAMPLE AND DATA MANIPULATION

The sample selection begins by identifying all the financial restatements for Canadian firms that are announced between January 1, 2007 and December 31, 2013 by searching on FACTIVA using the key words “restate”, “restating”, “restates”, “restated” and “restatement”. If the news report stated that the firm intended to restate, would restate or some other similar expression, the restatement event is captured for this firm. For announcements stating that the firms had restated, the first announcement date is used as the restatement announcement date. In the absence of an announcement on FACTIVA that the firm had restated, we checked SEDAR to ensure that all restatement information was captured.

This resulted in the identification of 394 events for 281 companies listed on the TSX and TSX-V. Market data was collected for the year (approximately 250 working days) before and after each restatement announcement. The daily stock returns, bid-ask spreads, trading volumes, trading values and closing prices of companies listed on the TSX were collected primarily from the Canadian Financial Markets Research Centre (CFMRC) database and those for companies

listed on the TSX-V were obtained from the TMX group.¹ From this initial sample, 90 events are eliminated as they did not have trading data since the restating firms were temporarily halted, suspended or delisted prior to the restatement events and 23 events had no trading information, or even bid-ask spread information for the five working days surrounding each event. The two restatement events that were followed by M&As involving the restating firms by three months after the restatement announcements were retained in the sample. Table 1 provides the details of the elimination process from the initial sample to the final sample.

The final sample consists of 212 companies and 281 restatement events of which 114 are for TSX-listed companies, 161 are for TSX-V-listed companies, and 6 are for companies that moved from the TSX to the TSX-V during the studied period around each restatement. The final sample consists of 57 multi-announcement financial restatement events (i.e., possible or actual restatement intentions followed by actual restatements) and 167 single-announcement financial restatement events (14 restatement intentions with no subsequent actual restatements and 153 actual restatements with no previous announcements that they intended to restate or were contemplating such).

All the restatement actions are classified into four categories. Type one actions are those associated with an announcement that includes words indicating a mistake or misstatement such as "correct", "error", "irregularity", "wrong", and "mistake". Type two actions consist of restatements to accommodate a change in a firm's accounting policy or different way of calculating an accounting item with no word indicating that they are of type one. Type three actions are those associated with discontinued operations, reclassifying of assets after an M&A, selling properties or some reason other than those included in action types one and two. Type

¹ Bloomberg was used as a secondary source of market data for companies with insufficient trading data from these two primary sources.

four actions are those in response to a review of a regulatory agency such as the BCSC. All the restatements also are divided into two samples based on whether the news or official announcements mentioned that the restatements would have no impact on the restating firm's cash flows, net cash balances or financial position or expressed similar wordings to that effect.

Based on Panel A of Table 2, most of the single-announcement financial restatement events are actual restatements since only 14 restatement “intentions” are not followed by actual restatements. There are an equal number of actual type one and two restatements with an almost equal number with and without some commentary about the impact on the financial positions of the restating firms. Based on Panel B of Table 2, more than half (57.9%) of the multi-announcement financial restatements are of type 1 and almost one-third (29.8%) are of type 2. It is noteworthy that in the final sample, only 9 companies are not cross-listed in the U.S.

4. HYPOTHESES

All of the financial restatements in our final sample are due to accounting fraud or errors and changes in accounting policy. Turner *et al.* (2001) find that negative price impacts are associated with “error related” financial restatements (type1 herein) and that no significant price effects are associated with changes in accounting policy or using different ways to calculate financial statement items (type2 herein). However, we expect the price effects associated with type1 financial restatement announcements to be lessened, on average, if the restatement announcements contain wording such as “this restatement will have no impact on cash flows, net cash balances or financial positions”. Our first and second hypotheses are:

H_0^1 : Significant price effects are not associated with financial restatements that are “error related” (type1) or involve changes in accounting presentation (type2).

H_a^2 : The price effects associated with type1 and type2 financial restatement announcements

will be greater if the restatement announcements contain wording such as “this restatement will have no impact on cash flows, net cash balances or financial positions”.

Leuz and Verrecchia (2000) argue that the bid-ask spread addresses the adverse selection problem which arises from transactions in company shares in the presence of asymmetrically informed investors. Trading volume is a measure of liquidity in that it captures the willingness of some investors to trade. This willingness to transact in firm shares should be inversely related to the existence of information asymmetries. Anderson and Yohn (2002) and Palmrose *et al.* (2004) test for changes in spreads around restatement announcements. Unlike Palmrose *et al.* (2004), Anderson and Yohn (2002) find a significant increase in spreads around revenue recognition restatements. Since we expect bid-ask spreads, trading volumes and trading values to increase following type1 single-announcement restatements, our third hypothesis in its alternative form is:

H_a^3 : The relative quoted bid-ask spreads, trading volumes and trading values increase after type1 single-announcement restatement announcements.

Xu and Malkiel (2003) report that idiosyncratic volatility is positively related to expected earnings growth. Guo and Savickas (2006) find that idiosyncratic volatility is negatively related to future stock market returns. Jiang *et al.* (2009) find that stock return differences across idiosyncratic volatility deciles are largely driven by news about the future earnings of firms. Because financial restatement announcements send a market signal that the firm-specific information associated with pre-restatement prices was of lower quality, they are likely to have an impact on idiosyncratic volatility. Thus, our fourth hypothesis in its alternative form is:

H_a^4 : Idiosyncratic volatility increases following type1 single-announcement restatement announcements.

The restating firms in our sample either first announced a financial restatement when it occurred or used a series of announcements that culminated with the announcement of the full details of the financial restatement. As noted earlier, we refer to the former and the latter as single- and multiple-announcement restatements, respectively. An example of a multiple-announcement restatement is an initial public announcement that the firm is investigating whether it may need to financially restate, followed later by an announcement that the firm intends to restate with some preliminary information containing some reasons and financial statement impacts of such, and culminating at a subsequent point in time with the restated financial statements and/or related documents. Although single- and multiple-announcement restatements differ in terms of their associated market anticipation, we expect that the major market effects will be associated with the first announcement by the restating firms that it intends to restate, particularly if it provides some initial estimates of restatement effects. Thus, the fifth hypothesis in its alternative form is:

H_a^5 : The major market impact occurs when a firm announces its intention to restate for a multiple-announcement restatement or announces that it has restated for a single-announcement restatement.

Single- and multiple-announcement restatements differ in terms of their impacts on the rate of uncertainty resolution. Thus, the price effects associated with firm announcements that the firm intends to restate and did restate for multiple-announcement restatements may be higher than that for firm announcements that they have restated for single-announcement restatements. Therefore, we provide a first test of whether the choice of when and what a firm discloses has an effect on the price effects associated with financial restatements. Thus, the sixth hypothesis in its alternative form is:

H_a^6 : The price effects associated with multiple-announcement restatements are higher than those associated with single-announcement restatements.

Furthermore, Bhattacharya and Spiegel (1991) conjecture that an increase in bid-ask spreads at the time of the restatement announcement is indicative of an increase in uncertainty. Conroy *et al.* (1990) use a trading-volume measure of liquidity which is primarily motivated by empirical findings of a negative relationship between volumes and bid-ask spreads. Therefore, we also expect bid-ask spreads to be higher and trading volumes, trading values and idiosyncratic volatilities to be lower in the period between the intention announcement and the final restatement announcement for multiple-announcement restatements. Thus, our seventh hypothesis in its alternative form is:

H_a^7 : Bid-ask spreads are higher and trading volumes, trading values and idiosyncratic volatilities are lower in the in-between period and revert back to pre-first-announcement levels after the final restatement announcement.

5. METHODOLOGY

5.1 Determination of the Event Window

Previous studies, such as Palmrose *et al.* (2004), adopt both a two-day (the day of and the day after) event window and a three-day event window [-1, +1] centered on each restatement-related announcement to capture any news leakage or delayed market response to the information contained in the announcement. In this study, we also use the three-day event window. The event day [0] is set based on the earlier of the press release time and the official restatement filing time. If this time is after 4:00pm (i.e., the close of trading on the TSX and TSX-V), then the event day [0] is set as the next trading day. We have an in-between period for the multiple-announcement restatements which starts on the second day [+2] after the day of the intention

announcement and ends on the second day [-2] before the official restatement announcement day.

5.2 Regression Model for Estimating the Average Daily Abnormal Return

To test the market effects of different types of restatements, we first conduct an event study to obtain the abnormal returns (ARs) associated with each restatement. We use the following multiple-beta market model to quantify the stock price reactions to each restatement announcement:

$$R_{it} = \alpha_i + \beta_{i1}R_{mt} + \beta_{i2}R_{mt}D_1 + \beta_{i3}R_{mt}D_2 + \beta_{i4}R_{mt}D_3 + \sum_{j=-1}^1 \gamma_{ij}D_4 + \sum_{k=-1}^1 \gamma_{ik}D_5 + \sum_{l=-1}^1 \gamma_{il}D_6 + \varepsilon_{it} \quad (1)$$

where R_{it} is the excess return on restatement i for trading day t (i.e., the return for stock i minus the daily Canadian one-month T-bill rate); α_i is the intercept for restatement i ; R_{mt} is the excess return for the market, as proxied by the excess return on the S&P/TSX Composite Index for TSX listed firms or the TSX Venture Composite Index for TSX-V listed firms; D_1 to D_3 are dummy variables each equal to one on and after and until the next restatement announcement for each announcement associated with restatement i and zero otherwise to account for the possibility that the beta of the firm might change due to each restatement announcement associated with restatement i ; D_4 to D_6 are the dummy variables each equal to one for the restatement announcements associated with restatement i for day j or k or l in the event window that covers the three days centered on the specific restatement announcement for restatement i and zeros otherwise; $\gamma_{i.}$ are the daily abnormal returns (ARs) during the three-day event window [-1, 1] centered on each restatement announcement associated with restatement i ; and ε_{it} is the error term that is assumed to be normally distributed with zero mean, constant variance and zero correlation between error terms across and over time.

The ARs are estimated using up to 365 trading days with a minimum of approximately 180 trading days before the first announcement associated with restatement i and up to 365 trading days with a minimum of approximately 90 trading days after the last restatement announcement associated with restatement i . The daily ARs are averaged across all the stocks in various samples for a specific type of restatement announcement to obtain their daily average abnormal returns (AARs). The associated cumulative average abnormal returns (CAARs) are the sum of the AARs over a given multi-day time period. These cross-sectional mean and median AARs and CAARs are tested using a t-test and a Wilcoxon signed ranked test, respectively.

5.3 Determination of Other Market Effects

We examine changes in other market effects (betas, quoted and relative spreads, trading volumes and values, and idiosyncratic risks) for four windows around the announcement day for single-announcement restatements, which are [-90, -2], [-30, -2], [+2, +30] and [+2, +90], respectively. We examine changes in these other market effects for five windows for multiple-announcement restatements, which are [-90, -2] and [-30, -2] relative to the intention announcement day, the in-between period, and [+2, +30] and [+2, +90] relative to the official restatement announcement day. For each of these periods, we get the mean value of the quoted spread given by $(Ask - Bid)$, the relative quoted spread given by $(Ask - Bid) / [(Ask + Bid)/2]$, the trading volume in number of shares, trading value in Canadian dollars for each firm, and the standard deviation of the error term ε_{it} based on our estimated market model. To assess changes in the behavior of these other market effects around the announcement days for the various types of single-announcement restatements, we conduct cross-sectional tests for the vectors of differences of [+2, +30] - [-30, -2] and [+2, +90] - [-90, -2]. For the multiple-announcement restatements, we conduct similar tests using the vectors of differences of [-90, -2], [-30, -2]

relative to the intention announcements, the in-between period and [+2, +30], [+2, +90] relative to the final restatement announcements.

6. EMPIRICAL RESULTS

6.1 Single-announcement Restatements

In this section, we examine nine samples containing Type1 and/or Type2 single-announcement restatements or subsets thereof. The samples are Type1&2, Type1 (all, TSX only, TSX-V only, and all with and without impacts) and Type2 (all, and all with and without impacts), respectively. “Impacts” refer to restatements with or without wording such as “this restatement will have no impact on cash flows, net cash balances or financial positions”.

The test results for each sample are reported in tables 4 and 5. In Panel A of Table 4, the mean and median CAAR of -2.88% and -1.28% for the Type1&2 restatements for the three-day event window [-1, 1] are statistically significant (p-values of 0.0016 and 0.0066, respectively). When we examine the CAARs for the Type1 and Type2 restatements separately, we find Type1 restatements have significant three-day mean and median CAARs of -3.76 percent (p-value = 0.010) and -2.68 percent (p-value = 0.0192), respectively. This is consistent with our first alternative hypothesis that error-related single-announcement restatements have significantly negative price impacts. As reported in panel B of table 4 for the type 1 single-announcement restatements, we observe significant mean and median price reactions of -2.67 percent and -0.58 percent for the event window [0, +1], which is consistent with the finding of Palmrose *et al.* (2004) for the U.S. that the major market effects occur in the [0, +1] event window. We find that the CAARs for Type1 restatements for the [-4, -2] and [+2, +4] windows are insignificant. This implies that there is no material information leakage or slowness in incorporating the information contained in the financial restatements.

The abnormal returns for the Type1 single-announcement restatements by listing venue are reported in Table 5. We observe significant mean and median CAARs for event window [-1, 1] of -5.89 percent (p-value = 0.0016) and -5.13 percent (p-value = 0.0002), respectively, only for type1 restating firms listed on the TSX-V.

Table 5 also reports the abnormal returns for the type1 single-announcement restatements by whether or not they include wording such as “this restatement will have no impact on cash flows, net cash balances or financial positions”. We observe that the mean and median CAAR for the event window [-1, 1] are only significant when such wording is not included for both the type1 and type2 single-announcement financial restatements, and are greater in magnitude and significance for the type1 than type 2 single-announcement financial restatements. Specifically, the mean and median CAAR [-1, 1] are respectively insignificant values of -1.32% (p-value = 0.1652) and -2.08% (p-value = 0.1633) for the type1 single-announcement financial restatements with such wording. In contrast, the mean and median are respectively significant values of -6.46% (p-value = 0.0081) and -6.34% (p-value = 0.012) for the type1 single-announcement financial restatements without such wording. These results are consistent with our second hypothesis and also consistent with the finding of Palmrose *et al.* (2004) that firms restating more material misstatements incur more severe market reactions.

Since financial restatement announcements could affect a firm’s systematic risk, we examine the changes in the market betas associated with the different types of restatements. As reported in Table 6, both the mean and median post-announcement changes in the market betas are a significant -0.3916 (p-value = 0.0309) and -0.2525 (p-value = 0.0149), respectively, for type2 restatement announcements. Furthermore, both the mean and median changes in the market betas for type2 restatement announcements that include a “no impact” disclosure are significant values

of -0.5391 (p-value = 0.0025) and -0.2914 (p-value = 0.0004), respectively. None of the average post-announcement changes in the market betas are significant for the type1 restatement announcements.

Table 7 reports the mean and median differences between post- and pre-announcement windows for the single-announcement restatements of Type1 and Type2 separately and combined for idiosyncratic volatility, quoted spreads, relative quoted spreads, traded share volumes and traded share values. The traded volumes are in thousands of shares and the traded values are in thousands of CDN dollars. The window comparisons are [+2, +90] with [-2, -90] in Panel A and [+2, +30] with [-2, -30] in Panel B.

We observe only one significant change in the idiosyncratic volatilities, as measured by the standard deviations of the market model error terms ε_{it} . This is for the median change of 0.0026 (p-value = 0.0849) for Type1 financial restatements for the longer pre- and post-announcement comparison windows. Significant changes in quoted spreads confined to the longer comparison windows are associated with the Type1&2 and Type2 samples. For the Type1&2 sample, the mean and median changes in the quoted spreads are -0.0076 (p-value = 0.0260) and -0.0015 (p-value = 0.0345), respectively. For the Type2 sample, the mean and median changes in the quoted spreads are -0.0085 (p-value = 0.0364) and -0.0019 (p-value = 0.0104), respectively. In contrast, the significant changes in quoted spreads confined to the shorter comparison windows are associated with the Type1&2 and Type1 samples. For the Type1&2 sample, the mean and median changes in the quoted spreads are -0.0066 (p-value = 0.0064) and -0.0009 (p-value = 0.0427), respectively. For the Type2 sample, the mean and median changes in the quoted spreads are -0.0090 (p-value = 0.0145) and -0.0012 (p-value = 0.0587), respectively. Significant changes in the relative quoted spreads are confined to the longer comparison windows and the Type1&2

sample. They are the mean and median changes in the relative quoted spreads of 0.0062 (p-value = 0.0913) and 0.0014 (p-value = 0.0616), respectively.

Significant changes in traded share volumes are confined to the Type1&2 sample for both comparison window lengths. Specifically, we observe significant mean changes of 21,090.31 in thousands of shares (p-value = 0.0873) and 23,291.56 in thousands of shares (p-value = 0.0656) for the longer and shorter comparison window lengths, respectively, for the Type1&2 sample. Only the mean change of 89,960.06 thousands of CDN dollars (p-value = 0.1027) for traded share value for the shorter comparison window length for the Type1 sample is (marginally) significant.

Table 8 presents the results for these other market effects for Type1 single-announcement restatements by TSX and TSX-V listed firms separately. We observe a significant increase in the median idiosyncratic volatility of 0.0163 (p-value = 0.0096) from event-window [-90, -2] to [+2, +90] for the Type1 single-announcement restatements by TSX-V listed firms (see Panel A of Table 8). Similarly, there is a significant increase in the mean traded values of 266,359.20 thousands of CDN dollars (p-value = 0.0620) from the period [-30, -2] to [+2, +30] for the Type1 restatements by TSX listed firms.

Table 9 presents the other market effects for Type1 and Type2 financial restatements with and without impact disclosures for the shorter and longer windows of 29 and 89 days, respectively, before and after the event date. Significant changes in quoted spreads are found for the Type2 financial restatements with no impact disclosures for the longer comparison windows. The mean and median changes in the quoted spreads are -0.0062 (p-value = 0.0348) and -0.0018 (p-value = 0.0246), respectively. The relative quoted spreads associated with Type2 financial restatements with no impact disclosures increase significantly by a mean value of 0.0077 (p-value = 0.0671)

and median value of 0.0028 (p-value = 0.0820) based on the longer comparison windows. The trading volumes associated with Type1 financial restatements with impact disclosures increase significantly by a mean value of 94,89.73 thousand CDN dollars (p-value = 0.0461) and median value of 52,72.71 thousands CDN dollars (p-value = 0.0546) based on the shorter comparison windows. The relative quoted spreads associated with Type1 financial restatements with impact disclosures decrease by a mean value of -0.0140 (p-value = 0.1073) based on the shorter comparison windows. The trading volumes associated with Type2 financial restatements with no impact disclosures increase significantly by a median value of 10,494.47 thousand shares traded (p-value = 0.0883) based on the shorter comparison windows.

6.2 Multiple-announcement Restatements

As in Scholz (2008), we initially treat each multiple-announcement restatement as one restatement by combining the effects from the various announcements. Based on Panel B of Table2, there are 33 Type1 multiple-announcement restatements in our sample. Based on the number of days in the in-between period, all the multiple-announcement restatements can be categorized into three categories: 1) those where the number of days in between is more than two days; 2) those where the number of days in between is one or two days; and 3) those where the number of days in between is zero, which means that the official announcements occur on the day following the intention announcement day. For those with a zero-day in-between, we define them as single-announcements and treat their two consecutive announcement-day CAAR as being a single day AR. We have 23 multiple-announcement restatements with in-between periods of more than two days. If we exclude the one with 78 in-between days and another with 63 in-between days, the mean of number of days is 10.43.

For the multiple-announcement Type1 restatements, we examine the CAAR for the

restatement intention dates, in-between periods, the final restatement dates, and the period extending from the intention date through the in-between period. For those multiple-announcement restatements that have only one day in between, because each event window is set as [-1, +1], we use AAR [-1] for the first announcement as the pre-announcement return and CAAR [-2, 0] for the second announcement as the intention announcement effect.

Based on Panel A of Table 10, we observe significant mean and median CAARs of -5.35 percent (p-value = 0.0076) and -2.38 percent (p-value = 0.0088), respectively, for the three-day window [-1, +1] for intention announcements. We also observe significant median CAARs of -3.42 percent for the in-between periods, and no significant CAAR for the final official restatement windows. These results are consistent with our fifth hypothesis. When we combine the CAAR from the intention announcement window with that for the in-between period, we obtain a significant mean CAAR of 16.16 percent (p-value of 0.0940) and median CAAR of -8.82 percent (p-value of 0.0032).

We now examine the ARs for each day with the three-day window for intention announcements. Based on Panel B of Table 10, only the median market impact of -2.4 percent for day [0] is significant (p-value of 0.0258). This findings is consistent with our fifth hypothesis which is the major market impact occurs when a firm announces its intention to restate for a multiple-announcement restatement or announces that it has restated for a single-announcement restatement. Based on Panel C of Table 10, we find that all ΔBeta are not significant.

Due to the large CAAR for the in-between period for the multiple-announcement type1 financial restatements, we find that their CAAR effects (mean and median values of -16.16 percent and -8.82 percent, respectively) are substantially greater than those for their single-announcement counterparts (mean and median of -3.76 percent and -2.68 percent, respectively).

This finding is consistent with our sixth hypothesis, which is that the price effects associated with multiple-announcement restatements are higher than those associated with single-announcement restatements.

We report test of the other market effects for Type2 multiple-announcement restatements in Table 11. In Panel A of Table 11, we compare their values in the period [-90, -2] prior to the intention announcement with the period [+2, +90] after the final restatement announcement. We find that relative quoted spreads increase by a significant mean value of 0.0260 (p-value = 0.1016), and the idiosyncratic volatility increases significantly by a mean value of 0.0185 (p-value = 0.0237) and a median value of 0.0067 (p-value = 0.0727). When we narrow the comparison periods to [-30, -2] prior to the intention announcement and [+2, +30] after the final restatement, we find that the relative quoted spreads increase by a significant mean value of 0.0220 (p-value = 0.0718) but that the mean and median changes in idiosyncratic volatility are insignificant.

In Panel C the cross-sectional mean trading volume significantly drops with the median value of -6220.02 thousand shares traded (p-value = 0.0484) from period [-90, -2] of the intention announcement to the in-between period. The idiosyncratic volatility also decrease significantly by mean value of -0.0135 (p-value= 0.0957) and median value of -0.0143 (p-value= 0.0874).

Panel D clearly shows that the relative quoted spread cross-sectional mean changes significantly from [-30, -2] prior to the intention announcement day to the in-between period. The mean and median changes are 0.0231 (p-value = 0.0138) and 0.0122 (p-value = 0.0103), respectively. The median change of trading value from [-30, -2] prior to the intention announcement to the in-between period has a significant value of -1209.40 thousand CDN dollars (p-value = 0.0232).

In Panel E, we observe significant increases in idiosyncratic volatilities from the in-between period to the [+2, +90] period after the final official restatement. The mean change is 0.0272 (p-value = 0.0282) and the median change is 0.0149 (p-value = 0.0160). The trading volumes significantly increase after the final restatement announcements based on a comparison of the period [+2, +90] with the in-between period. The mean increase is 19,360.64 thousands of shares traded (p-value = 0.0404) and the median increase is 4,922.10 thousands of shares traded (p-value = 0.0296).

Based on Panel F, we observe significant changes in the shares traded from the in-between period to the period [+2, +30] after the final restatement announcement. Their mean value of 12,949.76 thousand shares (p-value = 0.0527) and median value of 2,878.72 thousand shares (p-value = 0.0637) are smaller than their corresponding values for the longer window. Trading values increase significantly from the in-between period to the [+2, +30] period after the official restatement announcements. The mean and median increases are 9,886.20 thousand CDN dollars (p-value = 0.0641) and 1,159.01 thousand CDN dollars (p-value = 0.0117), respectively. These findings support our seventh hypothesis of higher bid-ask spreads and lower trading volumes, trading values and idiosyncratic volatilities in the in-between period that revert back to their pre-first-announcement levels after the final restatement announcement.

7. ROBUSTNESS TESTS

As a test of robustness, the daily abnormal returns are estimated using returns based on the daily mid-spreads instead of the daily closing prices. We find somewhat similar results when we compare the new quoted-based CAAR results for various event windows for the Type1 and Type2 single-announcement restatements separately and together reported in Table 12 with their trade-based counterparts reported earlier in Table 4. Consistent with our previously reported

results for the [-1, +1] window, we obtain statistically significant mean and median CAAR of -2.69% (p-value = 0.0101) and -2.04% (p-value <.0001), respectively, for the Type1&2 undifferentiated sample, and statistically significant mean and median CAAR of -3.42% (p-value = 0.0438) and -2.70% (p-value = 0.0070), respectively, for the Type1 single-announcement restatements. For this three-day event window, the major impact still occurs on day [0]. Specifically, the mean and median AR for day [0] for the Type1 single-announcement restatements are -1.83% (p-value = 0.0952) and -0.91% (p-value = 0.0095), respectively. While the median CAAR for the two-day event window [0, +1] remains significant (p-value = 0.0491), the mean CAAR is no longer significant.

We find somewhat weaker results for the CAAR for the event window [0, +1] when we compare the new quoted-based results reported in Table 13 with the trade-based results reported earlier in Table 5 for the Type1 single-announcement restatements differentiated by disclosed impacts. The mean and the median CAAR for the event window [0, +1] remain negative and highly significant for the type1 restatements of TSX-V-listed firms. Both the mean and median CAAR for the event window [0, +1] for the Type1 and Type2 restatements with disclosed impacts remain negative but generally with poorer levels of significance. While the median CAAR remains significant at the 0.05 level for the Type1 restatements with disclosed impacts, its highly significant mean counterpart becomes insignificant at conventional levels. Both the mean and median CAAR for the event window [0, +1] for the Type2 restatements with disclosed impacts are no longer significant at conventional levels.

We find similar results when we compare the new quoted-based results for beta changes reported in Table 14 with the trade-based results reported earlier in Table 6 for the Type1 and Type2 single-announcement restatements. The exceptions include the median beta change for the

Type1&2 restatements that is no longer significant and the mean beta change for the Type2 restatements which moves from being significant at the 0.05 to the 0.10 level.

We find some changes in the results for multiple-announcement restatements based on a comparison of Table 15 with Table 10. For example, based on a comparison of the Panel As in both tables, we find that the highly significant negative mean and median CAAR for the [-1, +1] window for intention announcements remain significant but are now only weakly significant. In contrast, the insignificantly negative mean CAAR for the [0, +1] window for intention announcements is now significant and the weakly significant median counterpart remains negative but becomes highly significant. When we compare the Panel Bs in both tables for each day in the [-1, +1] window for intention announcements, we find that only the median AR of -0.0141 for day [0] is significant in each panel (p-value = 0.0240 in Table 10 and 0.0881 in Table 15). When we compare the beta-change values in Panel C in both tables, we find that all the change estimates remain insignificant at conventional levels.

8. CONCLUSION

By analyzing Canadian restatement data, we find that error-related single-announcement financial restatements are associated with significant negative market impacts in a two day event window [0, +1]. This result is consistent with previous research that finds that restatement announcements are associated with negative market impacts depending on their type (e.g., Dechow *et al.*, 1996; Turner *et al.*, 2001; Anderson *et al.*, 2002; Wu, 2002; Palmrose *et al.*, 2004).

We also find that bid-ask spreads, trading volumes and trading values do not change significantly for error-related, single-announcement financial restatements in the post-announcement period. In contrast, the median idiosyncratic volatility associated with error-

related, single-announcement restatements increases significantly following the announcements.

For multiple-announcement restatements, we observe significant market impacts at the intention announcement day and additional market impacts occur prior to but not on the official restatements. In the in-between period after the intention to restate is announced, bid-ask spreads increase and trading volumes, trading values and the idiosyncratic volatilities decrease significantly. After the official restatement is announced, trading volumes, trading values and idiosyncratic volatilities increase significantly.

We observe higher total market impacts for multiple versus single announcement financial restatements most likely due to the greater uncertainty and the negative signal sent to investors about the state of financial control and management associated with the former types of restatements. This is consistent with the findings of Schmidt and Wilkins (2012) that lower auditor quality and lower audit committee expertise are associated with poorer financial reporting timeliness as measured by the duration of the in-between period for financial statement restatements.

9. LIMITATIONS AND FUTURE RESEARCH

The research reported herein can be extended by examining various categories of accounting-error (Type1) restatements. These include: (1) type(s) of error corrections (e.g., revenue recognition, expense recognition, misclassification, equity, tax accounting, and capital assets); (2) irregularity (e.g., intentional misstatements or omissions of amounts or disclosures in financial statements) (Hennes *et al.*, 2008); and (3) originator of the restatement (e.g., firm, auditor or regulator). Follow-up studies also could examine changes in corporate governance (e.g., executive, auditor and board member changes) after single-announcement restatements and in-between and after multiple-announcement restatements.

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TABLES AND FIGURES

Table 1. Number of financial restatements eliminated from the initial sample

This table provides descriptive statistics for the number of financial restatements eliminated from the initial sample for various reasons before arriving at the final sample by listing venue. The financial restatement events followed by M&As in the following three months for two TSX-V firms are retained in the final sample.

	Number of events from companies listed on:			
	TSX	TSX-V	TSX to TSX-V	Total
Initial sample	158	227	9	394
No trading data because firm halted, suspended or delisted	36	51	3	90
No trading data for unknown reasons	8	15		23
Total number of eliminated events	44	66	3	113
Final sample	114	161	6	281

Table2. The number of each type of financial restatement

This table provides the number of financial restatements in the final sample of restatement events differentiated by type, whether they were single or multi-announcement restatements, whether they are restatement intentions or actual restatements and whether or not their disclosure includes a statement about their impact on the firm's financial situation. The four types of restatement events are: Type1: an announcement that includes words indicating a mistake or misstatement such as "correct", "error", "irregularity", "wrong", and "mistake". Type2: restatements to accommodate a change in a firm's accounting policy or different way of calculating an accounting item with no word indicating that they are of type1. Type3: restatements associated with discontinued operations, reclassifying of assets after an M&A, selling properties or some reason other than those included in action types1 and 2. Type4: restatements in response to a review of a regulatory agency such as the BCSC.

Panel A: Single-announcement financial restatements					
Type	Restatement Intentions		Actual Restatements		Total
	With Explanation	No Explanation	With Explanation	No Explanation	
1	2	3	21	24	50
2	1	4	25	20	50
3	0	2	8	14	27
4	0	2	12	29	40
Total	3	11	66	87	167
Panel B: Multiple-announcement financial restatements					
Type	Restatement Intentions		Actual Restatements		Total
	With Explanation	No Explanation	With Explanation	No Explanation	
1	15	18	14	19	66
2	6	10	6	12	34
3	1	2	1	2	6
4	0	3	0	5	8
Total	22	33	21	38	114

Table 3. Samples of single-announcement restatements examined

This table lists the samples of single-announcement restatements examined and the number of announcements so examined.

Sample	Description	Sample sizes
Type1&2	All the announcements for type1 and type2 single-announcement restatements	90
Type1	All the announcements for type1 single-announcement restatements	45
Type1-NoImpacts	All the announcements for type1 single-announcement restatements with announcement wordings such as “this restatement will have no impact on cash flows, net cash balances or financial positions”	21
Type1-Impacts	All the announcements for type1 single-announcement restatements without wording such as “this restatement will have no impact on cash flows, net cash balances or financial positions”.	24
Type2	All the announcements for type2 single-announcement restatements	45
Type2-NoImpacts	All the announcements for type2 single-announcement restatements with announcement wordings such as “this restatement will have no impact on cash flows, net cash balances or financial positions”	25
Type2-Impacts	All the announcements for type2 single-announcement restatements without wording such as “this restatement will have no impact on cash flows, net cash balances or financial positions”.	20
Type1-TSX	All the announcements for type1 single-announcement restatements in TSX	17
Type1-TSX-V	All the announcements for type1 single-announcement restatements in TSX-V	28

Table 4. Abnormal return test results for single-announcement restatements of Type1 and/or Type2

This table reports the mean and median CAAR for various event windows and the p-values based on t- and Wilcoxon tests of their statistical significance for the Type1 and Type2 samples combined and separately. Type1: an announcement that includes words indicating a mistake or misstatement such as "correct", "error", "irregularity", "wrong", and "mistake". Type2: restatements to accommodate a change in a firm's accounting policy or different way of calculating an accounting item with no word indicating that they are of type1. *, ** and *** refer to statistical significance at the 0.1, 0.05 and 0.01 levels, respectively. Sample (Type1&2) size N=90, Sample (Type1) size N=45, Sample (Type2) size N=45.

Statistic	Type1&2	Type2	Type1						
	[-1, +1]	[-1, +1]	[-1, +1]	[-4, -2]	[-1]	[0]	[+1]	[0,+1]	[+2, +4]
Mean CAAR	-0.0288***	-0.0286*	-0.0376***	-0.0001	-0.0082	-0.0209***	-0.0072	-0.0267**	-0.0018
t-test p-value	0.0016	0.0602	0.0100	0.941	0.1675	0.0080	0.2789	0.0325	0.1792
Median CAAR	-0.0128***	-0.0112	-0.0268**	-0.0006	-0.0024	-0.005688	-0.0052	-0.0132**	0.0002
Wilcoxon test p-value	0.0066	0.1081	0.0192	0.9705	0.1612	0.0322	0.2122	0.0430	0.5095

Table 5. CAAR test results for different single-announcement restatements of Type1 or Type2 differentiated by listing venue and impact disclosure

This table reports the mean and median CAAR for the event window [0, +1] for type1 restatements differentiated by whether they are listed on the TSX or TSX-V, and for Type1 and Type2 restatement differentiated by whether or not they include a disclosure on their cash or cash-flow-related impacts. The p-values for t- and Wilcoxon tests of their means and medians, respectively, are also reported. Type1: an announcement that includes words indicating a mistake such as "correct", "error", "irregularity", "wrong", and "mistake". Type2: restatements to accommodate a change in a firm's accounting policy or different way of calculating an accounting item with no word indicating that they are of type1. *, ** and *** refer to statistical significance at the 0.1, 0.05 and 0.01 levels, respectively. Sample (Type1 TSX-listed) size N=17, Sample (Type1 TSX-V-listed) size N=28, Sample (Type1 No impact disclosed) size N=21, Sample (Type1 Impact disclosed) size N=24, Sample (Type2 No impact disclosed) size N=25, Sample (Type2 Impact disclosed) size N=20.

Statistic	Type1				Type2	
	TSX-listed	TSX-V-listed	No impact disclosed	Impact disclosed	No impact disclosed	Impact disclosed
Mean CAAR	-0.0045	-0.0589***	-0.0132	-0.0646***	-0.0169	-0.0496**
t-test p-value	0.8068	0.0016	0.1652	0.0081	0.3408	0.0418
Median CAAR	-0.0003	-0.0513***	-0.0208	-0.0634**	0.0049	-0.0353**
Wilcoxon test p-value	0.9265	0.0002	0.1633	0.0120	0.6261	0.0441

Table 6. Results for tests of post-announcement changes in the market betas for different samples of single-announcement restatements

This table reports the mean and median changes (ΔBeta) for various samples of Type1 and Type2 financial restatements and tests of their significance using t- and Wilcoxon tests, respectively. Impact refers to at least one statement in the financial restatement disclosure that the restatement would impact the firm's financial situation. Type1: restatements whose announcements include words indicating a mistake or misstatement such as "correct", "error", "irregularity", "wrong", and "mistake". Type2: restatements to accommodate changes in accounting policy or different ways of calculating accounting items with no words indicating that they are of type1. *, ** and *** refer to statistical significance at the 0.1, 0.05 and 0.01 levels, respectively. Sample (Type1&2) size N=90, Sample (Type1) size N=45, Sample (Type2) size N=45, Sample (Type1 TSX-listed) size N=17, Sample (Type1 TSX-V-listed) size N=28, Sample (Type1 No impact disclosed) size N=21, Sample (Type1 Impact disclosed) size N=24, Sample (Type2 No impact disclosed) size N=25, Sample (Type2 Impact disclosed) size N=20.

Statistic	Type1&2	Type1					Type2		
		All	TSX-listed	TSX-V-listed	Impact disclosed	No impact disclosed	All	Impact disclosed	No impact disclosed
Mean ΔBeta	-0.2891	-0.1931	-0.9917	0.4519	0.1648	-0.5666	-0.3916**	-0.2146	-0.5391***
t-test p-value	0.2489	0.6737	0.2460	0.3321	0.7482	0.4701	0.0309	0.5316	0.0025
Median ΔBeta	-0.1735*	0.0936	-0.1236	0.0253	-0.2956	0.1526	-0.2525**	-0.1723	-0.2914***
Wilcoxon test p-value	0.0709	0.8026	0.2688	0.4957	0.2266	0.1526	0.0149	0.6742	0.0004

Table 7. Summary of test results for post-announcement changes in other market metrics for single-announcement restatements

This table reports the results of tests of post-announcement changes in idiosyncratic volatilities, quoted spreads, relative quoted spreads, traded volumes and traded values for single-announcement restatement types 1 and 2 separately and combined. The paired window comparisons are [+2, +90] with [-2, -90], and [+2, +30] with [-2, -30]. The *, ** and *** refer to statistical significance at the 0.1, 0.05 and 0.01 levels, respectively. Sample (Type1&2) size N=90, Sample (Type1) size N=45, Sample (Type2) size N=45. The traded volumes are in thousands of shares and the traded values are in thousands of CDN dollars.

Type	Statistic	Δ Idiosyncratic volatility	Δ Quoted spreads	Δ Relative quoted spreads	Δ Traded volumes	Δ Traded values
Panel A: Change from [-2, -90] to [+2, +90]						
1&2	mean	0.0619	-0.0076**	0.0062*	21,090.31*	36,213.89
	t-test p-value	0.3378	0.0260	0.0913	0.0873	0.2884
	median	0.0015	-0.0015**	0.0014*	2,741.67	-88.25
	Wilcoxon test p-value	0.3297	0.0345	0.0616	0.1941	0.7497
1	mean	0.1149	-0.0029	0.0082	40,540.38	49,899.75
	t-test p-value	0.3650	0.4761	0.1204	0.1681	0.3813
	median	0.0026*	-0.0006	0.0011	1,491.38	-88.25
	Wilcoxon test p-value	0.0849	0.5122	0.1749	0.6011	0.9811
2	mean	0.0067	-0.0085**	0.0033	16,666.88	-8,420.99
	t-test p-value	0.5655	0.0364	0.4631	0.1283	0.3409
	median	0.0004	-0.0019***	0.0019	6,534.02	-909.52
	Wilcoxon test p-value	0.7465	0.0104	0.1788	0.1820	0.5424
Panel B: Change from [-2, -30] to [+2, +30]						
1&2	mean	-0.0050	-0.0066***	-0.0033	23,291.56*	31,420.18
	t-test p-value	0.3414	0.0064	0.1995	0.0656	0.1949
	median	-0.0009	-0.0009**	0.0001	-80.31	209.28
	Wilcoxon test p-value	0.4168	0.0427	0.8260	0.3396	0.6870
1	mean	-0.0051	-0.0090**	-0.0028	26,476.84	89,960.06*
	t-test p-value	0.5540	0.0145	0.4741	0.2212	0.1027
	median	-0.0007	-0.0012*	<.0001	878.84	126.6
	Wilcoxon test p-value	0.7863	0.0587	0.8774	0.4461	0.9433
2	mean	-0.0049	-0.0027	-0.0027	20,153.28	853.26
	t-test p-value	0.4173	0.1863	0.3702	0.1794	0.9119
	median	-0.0015	-0.0007	0.0014	-582.41	660.02
	Wilcoxon test p-value	0.3614	0.2619	0.7263	0.5261	0.6012

Table 8. Summary of test results for post-announcement changes in other market metrics for single-announcement restatements differentiated by restatement type and listing venue

This table reports the results of tests of post-announcement changes in idiosyncratic volatilities, quoted spreads, relative quoted spreads, traded volumes and traded values for single-announcement restatement types 1 and 2 separately differentiated by listing venue. The paired window comparisons are [+2, +90] with [-2, -90], and [+2, +30] with [-2, -30]. *, ** and *** refer to statistical significance at the 0.1, 0.05 and 0.01 levels, respectively. Sample (Type1) size N=45, Sample (Type1 TSX-listed) size N=17, Sample (Type1 TSX-V-listed) size N=28. The traded volumes are in thousands of shares and the traded values are in thousands of CDN dollars.

Listing Market	Statistic	Δ Idiosyncratic volatility	Δ Quoted spreads	Δ Relative quoted spreads	Δ Trading volumes	Δ Traded values
Panel A: Change from [-2, -90] to [+2, +90]						
TSX listing	mean	-0.0496	-0.0001	0.0006	71,710.36	234,039.30
	t-test p-value	0.3071	0.9623	0.6281	0.2695	0.2437
	median	-0.0020	-0.0014	0.0007	-3,476.88	1,557.40
	Wilcoxon test p-value	0.6799	0.6507	0.5412	0.7983	0.7086
TSX-V listing	mean	0.2550	-0.0100	0.0213	14,397.65	-175.64
	t-test p-value	0.2729	0.3337	0.0821	0.1547	0.9819
	median	0.0163***	<.0001	0.0025	2,905.43	-350.78
	Wilcoxon test p-value	0.0096	0.5953	0.1311	0.2068	0.4205
Panel B: Change from [-2, -30] to [+2, +30]						
TSX listing	mean	-0.0049	-0.0040	-0.0002	53,018.84	266,359.20*
	t-test p-value	0.3350	0.2901	0.8683	0.2790	0.0620
	median	-0.0065	0.0024	<.0001	3,189.53	4004.40
	Wilcoxon test p-value	0.3732	0.8906	0.8596	0.7086	0.3124
TSX-V listing	mean	-0.0053	-0.0132**	-0.0023	4,864.40	-12,559.30
	t-test p-value	0.7357	0.0217	0.7748	0.4524	0.2432
	median	0.0019	-0.0045**	<.0001	291.92	-353.20
	Wilcoxon test p-value	0.7083	0.0118	0.9625	0.4980	0.3176

Table 9. Summary of test results for post-announcement changes in other market metrics for single-announcement restatements differentiated by restatement type and impact

This table reports the results of tests of post-announcement changes in idiosyncratic volatilities, quoted spreads, relative quoted spreads, traded volumes and traded values for single-announcement restatement types 1 and 2 separately differentiated by impact. The paired window comparisons are [+2, +90] with [-2, -90], which are referred to as “long”, and [+2, +30] with [-2, -30], which are referred to as “short”. *, ** and *** refer to statistical significance at the 0.1, 0.05 and 0.01 levels, respectively. Sample (Type1) size N=45, Sample (Type2) size N=45, Sample (Type1 No impact disclosed) size N=21, Sample (Type1 Impact disclosed) size N=24, Sample (Type2 No impact disclosed) size N=25, Sample (Type2 Impact disclosed) size N=20. The traded volumes are in thousands of shares and the traded values are in thousands of CDN dollars.

Type	Statistic	ΔIdiosyncratic volatility		ΔQuoted spreads		ΔRelative quoted spreads		ΔTrading volumes		ΔTraded values	
		Long	Short	Long	Short	Long	Short	Long	Short	Long	Short
1, no impact	mean	-0.0302	0.0100	-0.0006	-0.0082*	0.0028	0.0030	30,722.77	23,236.61	-1,713.04	74,853.47
	t-test p-value	0.5069	0.1943	0.8778	0.0567	0.2321	0.2429	0.4966	0.4900	0.9868	0.5366
	median	-0.0012	0.0011	-0.0004	-0.0007	0.0010	0.0001	985.28	-974.61	83.09	-2,770.31
	Wilcoxon test p-value	0.6854	0.4230	0.7181	0.2317	0.2870	0.9126	0.8631	0.7656	0.9875	0.8385
1, impact	mean	0.2600	-0.0202	-0.0021	-0.0079*	0.0075	-0.0140*	9,056.89	9,489.73**	7,108.11	5,009.46
	t-test p-value	0.3018	0.1881	0.6995	0.0626	0.3512	0.1073	0.4124	0.0461	0.2868	0.6542
	median	0.0128	-0.0039	-0.0006	-0.0016	0.0014	-0.0005	1,491.38	5,272.71*	-323.19	719.50
	Wilcoxon test p-value	0.1108	0.2728	0.5958	0.1134	0.3683	0.4900	0.5949	0.0546	0.8288	0.5678
2, no impact	mean	0.0134	-0.0057	-0.0062**	-0.0057*	0.0077*	-0.0044	14,221.32	21,463.43	-12,420.20	804.17
	t-test p-value	0.4697	0.4868	0.0348	0.0514	0.0671	0.1331	0.4014	0.2416	0.2974	0.9469
	median	0.0020	-0.0020	-0.0018**	-0.0024**	0.0028*	-0.0017	4,127.74	10,494.47*	-855.80	3,969.64
	Wilcoxon test p-value	0.7243	0.3782	0.0246	0.0425	0.0820	0.2725	0.5392	0.0883	0.5392	0.4780
2, impact	mean	-0.0006	-0.0040	-0.0063	0.0011	-0.0053	0.0011	21,491.21*	3,857.96	-2,227.34	-892.41
	t-test p-value	0.9681	0.6621	0.1796	0.6614	0.5154	0.7788	0.1025	0.8153	0.7986	0.8981
	median	-0.0013	0.0012	-0.0019*	0.0004	0.0008	0.0029	13,645.40	-5,812.62	-921.17	-1,580.19
	Wilcoxon test p-value	0.4593	0.6584	0.1084	0.6095	0.9632	0.6112	0.1297	0.1674	0.8317	0.8650

Table10. Results for type1 multiple-announcement restatements

This table provides all the AARs' and CAARs' mean and median values with their t test and Wilcoxon test p-values for the various categories. *means significant at 0.1; **means significant at 0.05 and ***means significant at 0.01; Sample size N=33 (33 intentions and 33 official restatements).

Panel A: Mean and median CAAR for each event window and their t test and Wilcoxon test p-values for Type1 multiple announcement restatements.						
	pre-intention announcement at [-4,-2]	Intention announcement at [-1,+1]	Intention announcement at [0, +1]	In-between Period	Final restatement at [-1, +1]	Intention effect period
Mean CAAR	-0.0214	-0.0535***	-0.0239	-0.1140	0.1341	-0.1616*
t-test p-value	0.2857	0.0076	0.3551	0.2753	0.2334	0.0940
Median CAAR	-0.0130	-0.0238***	-0.0287*	-0.0342*	-0.0022	-0.0882***
Wilcoxon test p-value	0.4243	0.0088	0.0881	0.1056	0.4354	0.0032
Panel B: Mean and median AR and their t test and Wilcoxon test p-values for each day in the event window for Type1 intention announcements.						
	Intention announcement at [-1]	Intention announcement at [0]	Intention announcement at [+1]			
Mean AR	-0.0030	-0.0031	-0.0208			
t-test p-value	0.2078	0.9334	0.3127			
Median AR	0.0036	-0.0240**	-0.0108			
Wilcoxon test p-value	0.5368	0.0258	0.3340			
Panel C: Mean and median Δ Beta' and their t test and Wilcoxon test p-values for each category.						
	Caused by intention announcements	Caused by final restatements	Caused by entire multiple-announcement restatements			
Mean Δ Beta	0.6264	-0.7935	-0.0733			
t-test p-value	0.5472	0.5063	0.6624			
Median Δ Beta	-0.2776	0.0672	-0.2446			
Wilcoxon test p-value	0.4815	0.8878	0.3277			

Table 11. Cross-sectional test results for the vectors of differences of trading volumes, quoted spreads, relative quoted spreads and traded values of multiple-announcement restatements

This table reports the results of the cross-sectional tests of the vectors of differences in the idiosyncratic volatilities, quoted spreads, relative quoted spreads, traded volumes and traded values for comparisons of post-official announcement windows, in-between windows and pre-intention announcement windows, respectively for type 1 multiple-announcement restatements. *, ** and *** refer to statistical significance at the 0.10, 0.05 and 0.01 levels, respectively. The traded volumes are in thousands of shares and the traded values are in thousands of CDN dollars.

	Δ Idiosyncratic volatilities	Δ Quoted spreads	Δ Relative quoted spreads	Δ Trading volumes	Δ Traded values
Panel A: Values for [+2,+90] after the official restatement minus [-90,-2] before the intention announcement					
mean	0.0185**	-0.0041	0.0260*	-755.089	4,247.72
t-test p-value	0.0237	0.7432	0.1016	0.8681	0.3494
median	0.0067*	0.0004	0.0011	2,936.01	1,758.86
Wilcoxon test p-value	0.0727	0.6261	0.498	0.6502	0.1995
Panel B: Values for [+2,+30] after the official restatement minus [-30,-2] before the intention announcement					
mean	0.0220	0.0194	0.0220*	5,304.93	-1,422.93
t-test p-value	0.1306	0.2067	0.0718	0.4383	0.8707
median	-0.0005	0.0008	0.0076	4,299.33	443.96
Wilcoxon test p-value	0.2387	0.2256	0.1756	0.2842	0.6261
Panel C: Values for in-between period minus [-90,-2] before the intention announcement					
mean	-0.0135*	-0.0166*	0.0080	-9,109.07	-8,394.03
t-test p-value	0.0957	0.0523	0.1994	0.1106	0.2770
median	-0.0143*	0.0001	0.0099	-6,220.02**	-2,271.71
Wilcoxon test p-value	0.0874	0.2538	0.1157	0.0484	0.1756
Panel D: Values for the in-between period minus [-30,-2] before the intention announcement					
mean	-0.0027	0.0051	0.0231**	-7,271.91	-14,649.80
t-test p-value	0.6102	0.2741	0.0138	0.1219	0.1164
median	0.0020	0.0021	0.0123***	-1,622.24	-1,209.40**
Wilcoxon test p-value	0.6226	0.1536	0.0103	0.1769	0.0232
Panel E: Values for [+2,+90] after the official restatement minus in-between period					
mean	0.0272**	0.0150	0.0162	19,360.64**	3,421.89
t-test p-value	0.0282	0.1845	0.1870	0.0404	0.4500
median	0.0149**	0.0020	-0.0006	4,922.10**	2,882.17
Wilcoxon test p-value	0.0160	0.1995	0.6477	0.0296	0.2842
Panel F: Values for [+2,+30] after the official restatement minus in-between period					
mean	0.0118	0.0059	0.0044	12,949.76*	9,886.20*
t-test p-value	0.1959	0.3238	0.5655	0.0527	0.0641
median	-0.0018	0.0013	-0.0010	2,878.72*	1,159.01**
Wilcoxon test p-value	0.4180	0.3885	0.8538	0.0637	0.0117

Table12. Robustness test results for abnormal returns for single-announcement restatements using mid-spread returns

This table reports the mean and median CAAR for various event windows and the p-values based on t- and Wilcoxon tests of the Type1 and Type2 samples combined and separately when returns are calculated using mid-spreads. Type1: an announcement that includes words indicating a mistake such as "correct", "error", "irregularity", "wrong", and "mistake". Type2: restatements to accommodate a change in a firm's accounting policy or different way of calculating an accounting item with no word indicating that they are of type1. *, ** and *** refer to statistical significance at the 0.1, 0.05 and 0.01 levels, respectively. Sample (Type1&2) size N=90, Sample (Type1) size N=45, Sample (Type2) size N=45.

	Type1&2	Type2	Type1						
	[-1, +1]	[-1, +1]	[-1, +1]	[-4, -2]	[-1]	[0]	[+1]	[0,+1]	[+2, +4]
Mean CAAR	-0.0269***	-0.0192	-0.0342**	-0.0076	-0.0074	-0.0183*	-0.0085	-0.0267	-0.0190
t-test p-value	0.0101	0.1133	0.0438	0.5724	0.3862	0.0952	0.3645	0.1213	0.2261
Median CAAR	-0.0204***	-0.0051	-0.0270***	-0.0072	-0.0061	-0.0091***	-0.0042	-0.0180**	-0.0012
Wilcoxon test p-value	<.0001	0.1190	0.0070	0.4333	0.3573	0.0095	0.2852	0.0491	0.3573

Table 13. Robustness test results for CAAR for different single-announcement restatements using mid-spread returns

This table reports the mean and median CAAR for the two day event window [0, +1] for type1 restatements on the TSX and TSX-V, and for type1 and type2 restatement differentiated by whether or not they include a disclosure on their cash or cash-flow-related impact when returns are calculated using mid-spreads. The p-values for t- and Wilcoxon tests of their means and medians are also reported. Type1: an announcement that includes words indicating a mistake such as "correct", "error", "irregularity", "wrong", and "mistake". Type2: restatements to accommodate a change in a firm's accounting policy or different way of calculating an accounting item with no word indicating that they are of type1. *, ** and *** refer to statistical significance at the 0.1, 0.05 and 0.01 levels, respectively. Sample (Type1 TSX-listed) size N=17, Sample (Type1 TSX-V-listed) size N=28, Sample (Type1 No impact disclosed) size N=21, Sample (Type1 Impact disclosed) size N=24, Sample (Type2 No impact disclosed) size N=25, Sample (Type2 Impact disclosed) size N=20.

	Type1				Type2	
	TSX-listed	TSX-V-listed	No impact disclosed	Impact disclosed	No impact disclosed	Impact disclosed
Mean CAAR	-0.0011	-0.0608***	-0.0273	-0.0408	-0.0132	-0.0263
t-test p-value	0.9685	0.0021	0.1798	0.1382	0.4284	0.1491
Median CAAR	-0.0025	-0.0324***	-0.0220	-0.0389**	0.0040	-0.0327
Wilcoxon test p-value	0.7756	<.0001	0.2317	0.0171	0.6373	0.1054

Table14. Robustness test results for Δ Beta for different single-announcement restatements using mid-spread returns

This table provides the results of the robustness tests for the mean and median Δ Beta and their t test and Wilcoxon test p-values for the various categories. The impact disclosed or not means whether or not their disclosure includes a statement about their impact on the firm's financial situation. Type1 means an announcement that includes words indicating a mistake such as "correct", "error", "irregularity", "wrong", and "mistake". Type2 means restatements to accommodate a change in a firm's accounting policy or different way of calculating an accounting item with no word indicating that they are of type1. *, ** and *** refer to statistical significance at the 0.1, 0.05 and 0.01 levels, respectively. Sample (Type1&2) size N=90, Sample (Type1) size N=45, Sample (Type2) size N=45, Sample (Type1 TSX-listed) size N=17, Sample (Type1 TSX-V-listed) size N=28, Sample (Type1 No impact disclosed) size N=21, Sample (Type1 Impact disclosed) size N=24, Sample (Type2 No impact disclosed) size N=25, Sample (Type2 Impact disclosed) size N=20.

	Type1&2	Type1					Type2		
		All	TSX-listed	TSX-V-listed	Impact disclosed	No impact disclosed	All	Impact disclosed	No impact disclosed
Mean Δ Beta	-0.1800	-00863	-1.0600	0.7002	0.4544	-0.6504	-0.2802*	-0.1436	-0.3940***
t-test p-value	0.4962	0.8611	0.1947	0.2415	0.4837	0.3916	0.0867	0.6608	0.0037
Median Δ Beta	-0.1232	0.0595	-0.1232	0.1223	-0.1251	0.1166	-0.2768**	0.0853	-0.3029***
Wilcoxon test p-value	0.1798	0.9834	0.1245	0.1202	0.4190	0.4777	0.0396	0.8983	0.0025

Table15. Robustness test results for type1 multiple-announcement restatements using mid-spread returns

This table provides robustness test results for the mean and median AAR and CAAR with their t test and Wilcoxon test p-values for the various categories. *means significant at 0.1; **means significant at 0.05 and ***means significant at 0.01; Sample size N=33 (33 intentions and 33 official restatements).

Panel A: Mean and median CAAR in each event window and their t test and Wilcoxon test p-values for Type1 multiple announcement restatements.						
	Relative to the intention announcement			In-between Period	Final announcement	Intention effect period
	[-4,-2]	[-1,+1]	[0, +1]		[-1, +1]	
Mean CAAR	0.0078	-0.0360	-0.0334	-0.0054	0.0292	-0.0432
t-test p-value	0.7029	0.0804*	0.0208**	0.8982	0.4234	0.3056
Median CAAR	-0.0130	-0.0150	-0.0259	-0.0349	-0.0082	-0.0504
Wilcoxon test p-value	0.8886	0.0594*	0.0074***	0.0950**	0.8247	0.0312**
Panel B: Mean and median AAR and their t test and Wilcoxon test p-values for each event day for Type1 intention announcements.						
	Relative to the Intention announcement day 0					
	[-1]	[0]	[+1]			
Mean AR	-0.0026	-0.0223	-0.0109			
t-test p-value	0.8502	0.1200	0.4264			
Median AR	-0.0014	-0.0141	<.0001			
Wilcoxon test p-value	0.7792	0.0881*	0.9628			
Panel C: Mean and median Δ Beta and their t test and Wilcoxon test p-values for the various categories.						
	Caused by intention announcements	Caused by final restatements	Caused by entire multiple-announcement restatements			
Mean Δ Beta	0.0650	-0.0110	-0.0146			
t-test p-value	0.8343	0.9790	0.9042			
Median Δ Beta	0.1088	-0.0994	-0.1023			
Wilcoxon test p-value	0.4964	0.6486	0.7396			