Financial restatements and Sarbanes–Oxley: Impact on Canadian firm governance and management turnover

Lawrence Kryzanowski [a,*], Ying Zhang [b,1]

[a] Senior Concordia University Research Chair in Finance, Department of Finance, John Molson School of Business, Concordia University, Montreal, P.Q., Canada H3G 1M8
[b] Department of Accounting and Finance, I. H. Asper School of Business, University of Manitoba, Winnipeg, MB., Canada R3T 5V4

ARTICLE INFO

ABSTRACT

Canadian firms have different roots (e.g., more concentrated ownership and smaller size) than U.S. firms and Canadian regulatory enforcement follows a different route (principle- versus rule-based) that embodies the underlying intent of Sarbanes–Oxley (SOX). Financial restatements are more likely when Canadian firms have lower blockholder or management ownerships, lower proportions of unrelated directors, no financial savvy audit committee members and are not audited by prestigious auditing firms. To signal that they are dealing with the impact of agency problems on cash flow uncertainties, restating firms exhibit significantly higher turnovers of CEOs, CFOs and external auditors post-restatement, and they converge towards control-group governance post-restatement by making changes to the identified determinants of financial restatement likelihood. Consistent with prior results for U.S. firms, SOX had a small (extraterritorial) impact on the likelihood of post-restatement turnovers of management and other corporate overseers for Canadian restating firms.

© 2013 Elsevier B.V. All rights reserved.

1. Introduction

Good corporate governance is not only central to the effective and efficient operation of the corporation but it also plays a significant role in protecting shareholders' interests and maximizing shareholder value. Following the alleged accounting irregularities in the U.S., there have been significant developments in corporate governance such as the passage of the Sarbanes–Oxley Act (SOX) of 2002. Canada also experienced a number of high-profile alleged accounting irregularities. The arguably most publicized case was Nortel Networks who announced that it would restate its financial results three times within a three-year period (namely, October 2003, March 2004 and March 2006).

Restating firms send two signals to market participants. The first signal deals with the firm's expected future cash flows and the second signal deals with the uncertainty or quality of those future cash flows based on the perceived quality of the firm's corporate governance. As discussed more fully in Section 2, most of the prior literature has examined the likelihood of financial fraud (e.g., Abbott et al., 2000; Beasley, 1996; Dechow et al., 1996) or financial restatement (e.g., Abbott et al., 2004; Agrawal and Chadha, 2005) and corporate governance from a U.S. perspective.[2] The prior literature on the consequences of financial fraud or restatement on corporate

---

* Corresponding author. Tel.: +1 514 848 2424x2782.
  E-mail addresses: lawrence.kryzanowski@concordia.ca (L. Kryzanowski), ying.zhang@ad.umanitoba.ca (Y. Zhang).
[1] Tel.: +1 204 474 9480.
[2] The literature examines corporate fraud using the firms that are subject to SEC enforcement actions (Accounting and Auditing Enforcement Releases or AAER for GAAP violations). The sample size is larger when the selection criteria do not require that the financial restatements must be in response to SEC enforcement actions.

governance has similarly been confined primarily to U.S. firms (e.g., Desai et al., 2006), including the impact of the primarily rule-based Sarbanes–Oxley Act (SOX) on these consequences (e.g., Collins et al., 2009). The paucity of such studies in countries other than the U.S. leads to two overriding questions for firms with different roots (e.g., size and ownership concentration and pyramiding) that are subject to a different route for regulating corporate governance (principle- versus rule-based in the U.S.) that nevertheless embodies the objectives of SOX: Do the determinants of the likelihood of financial restatements differ from those identified for U.S. firms? Do the changes in governance (including the turnover of management and other corporate overseers) after financial restatements differ from those identified for U.S. firms? We maintain that these two important questions are best answered empirically.

Despite the similarities and differences between Canadian and U.S. markets that are subsequently discussed, both Canadian regulators and public Canadian firms had incentives to adopt policies that are comparable to SOX to remain competitive and attract foreign capital.[3] According to Burks (2007, 2010) and Collins et al. (2009), if the passage of SOX enhances the accountability of management for financial reporting, then disciplinary actions against management for accounting restatements should be more severe. While adherence to the Sarbanes–Oxley Act (SOX) of 2002 was voluntary for foreign firms with fiscal years prior to July 15, 2006, Anand et al. (2012) find that Canadian firms included in the S&P/TSX Composite Index for the Toronto Stock Exchange (TSX) over the five-year period 1999–2003 voluntarily adopted U.S. standards (SOX) rather than Canadian guidelines, regardless of their ownership structure. However, Nicholls (2006) and Ben-Ishai (2008) argue that a more flexible approach based on principle- versus U.S. style rule-based approach may be more appropriate in Canada due to the prevalence of publicly-traded small firms in Canada. Nevertheless, Canadian regulators did adopt a number of regulatory guidelines and rules on corporate governance in response to SOX and calls for improvements in corporate governance.[4]

By examining cross-country differences in corporate governance at both the firm and regulatory level using Canadian financial restatements for a more recent time period, we answer the two questions asked above and provide a test of the robustness of inferences drawn in the current literature primarily from U.S. financial restatements. Canada provides an ideal alternative laboratory for examining the impact of corporate financial restatements on corporate governance given its similarities and differences with the U.S. Both countries share similar legal, institutional and regulatory environments, including corporate governance mechanisms and minority shareholder protections but different routes for regulatory oversight and enforcement (principle-based in Canada versus rule-based in the U.S.). As noted by Nicholls (2006), the Canadian capital market has different roots, as one of its central features is the prevalence of small firms and public firms with controlling shareholders (concentrated ownership) who may make decisions for their own interests at the expense of minority shareholders. Canadian public companies also differ from their U.S. counterparts due to their greater concentration in a few industrial sectors (e.g., natural resources) and to the greater preponderancy of families as the ultimate controlling shareholders, restricted or subordinated voting shares issued, and pyramidal structures (e.g., Gadhoum, 2006; Gadhoum et al., 2005; King and Santor, 2008; Nicholls, 2006). These differences allow for an indirect test of the notion that the routes for regulatory oversight and enforcement can differ for firms in countries with different roots and still have some similar impacts on corporate governance practice, as we subsequently show for the turnover of management and other corporate overseers.

To this end, we examine a sample of 177 Canadian firms who announced financial restatements over the period of 1997–2006 and 177 matched control firms using a novel, hand-collected dataset of corporate governance characteristics from the proxy statements of Canadian firms. Our first contribution to the literature addresses the following research question: Is the likelihood of financial restatements for Canadian financial restaters dependent on the same governance characteristics as reported for U.S. restating firms? Unlike U.S. restating firms, we find that Canadian restating firms are smaller, concentrated in several industrial sectors (especially mining) and mainly involved with cost or expense related reporting problems. Consistent with U.S. studies, we find that the likelihood of restatement is unrelated to CEO and board chair duality or whether the CEO belongs to the founding family (like Abbott et al., 2004 but unlike Agrawal and Chadha, 2005), and is lower when a Canadian firm is cross-listed or has bigger blockholder ownership or its audit committee has at least one director with financial expertise. Unlike U.S. restating firms, Canadian firms are less likely to restate when they use more prestigious auditors, and have lower growth rates and higher proportions of unrelated directors, outside blockholder and management ownerships. These results suggest that unrelated directors and big 5 auditors may be more effective in reducing the likelihood of misreporting by Canadian firms.

Our second contribution to the literature addresses the following research question: Did the consequences of financial restatements on the turnovers of unrelated directors, audit committees, external auditors and top executives differ for Canadian restating firms from that reported for U.S. restating firms? Using a logistic regression that controls for other turnover determinants, we find that turnover rates of the CEO, top executives, and CFO are significantly higher for Canadian restating firms compared to control firms within the two years following the restatement announcements (as Agrawal and Cooper, 2007; Collins et al., 2009; Desai et al., 2006 find for U.S. firms). Unlike the case for U.S. restating firms (Agrawal and Cooper, 2007; Arthaud-Day et al., 2006; Srinivasan, 2005), external auditor turnover for Canadian restating firms are significantly higher compared to control

---

firms, while unrelated directors and audit committee members do not experience higher turnovers for Canadian restating firms compared to control firms. Combining the higher auditor turnover post-restatement with the higher likelihood of misreporting financial results for firms that do not use Big 5 auditors implies that external auditors appear to play a significant role as better watchdogs of the financial reporting activities of Canadian firms.[5] While Persons (2006) finds that the revelation of fraud and lawsuits is associated with higher turnovers of the Presidents and Board Chairs of U.S. firms, we find that the turnovers of Presidents but not Board Chairs are higher for Canadian restating firms.

Our third contribution to the literature addresses the following research question: Did the passage of SOX have an impact on management turnover around Canadian financial restatements given the mixed evidence for U.S. restating firms?[6] We argue that if SOX helps improve corporate governance, the negative repercussions for management or other overseers of restating firms should be more severe after SOX. Although CEO and CFO turnovers are still positively related to restatement announcements in the post-SOX period, we find that the passage of SOX has had no impact on the likelihood of management turnover in the post- versus pre-SOX period whether or not we control for any changes in restatement severity post-SOX. However, we do find a higher likelihood of CEO and CFO (but not President and top executive) turnovers after SOX for restatements that are associated with more negative abnormal returns. One possible explanation is that many financially restating firms examined herein are small firms (generally not cross-listed) so they did not adopt all of the SOX or SOX-like governance practices due to the negative net benefits of doing so. This would differ from the adoption practices of the relatively larger firms included in the S&P/TSX Composite Index examined by Anand et al. (2012).

Our fourth contribution to the literature addresses the following research question: Did any differences in the governance characteristics of the financial restating and control firms become narrower post-restatement? We find that the governance characteristics of restating firms become not significantly different from those of the control firms following the restatement announcements. Specifically, we find an increase in the number and proportion of unrelated directors and unrelated audit committee members as well as blockholder ownership post-restatement. These results provide evidence that Canadian restating firms, similar to their U.S. counterparts, attempt to improve their governance and restore their governance reputations after restatement announcements.

The remainder of this paper is organized as follows. Section 2 provides a brief review of the prior literature. Section 3 discusses the data and our sample selection. Section 4 investigates the link between governance characteristics and the likelihood of restatements. Section 5 analyzes the turnover (managerial, director and auditor) associated with restatement announcements. Section 6 examines the changes in governance following restatement announcements. Section 7 concludes the paper.

2. Prior literature

2.1. Financial restatements and corporate governance

Beasley (1996) investigates a sample of 75 fraud-associated firms during the period 1980–1991 and finds that a higher proportion of outside directors on the board (defined as gray plus independent directors) reduces the likelihood of fraud.[7] Dechow et al. (1996) examine 92 firms convicted by the SEC for violations of Generally Accepted Accounting Principles (GAAP) between 1982 and 1992. They find that the likelihood of manipulating earnings is higher in firms with no audit committee and outside blockholders, who have a greater proportion of insiders on the board, and whose CEOs are Board Chairs or the founders of their companies. Abbott et al. (2000) study the relation between audit committee activity and independence and financial statement fraud using the same data source as Beasley (1996) and Dechow et al. (1996). They conclude that firms with audit committees which are composed of independent directors and meet at least twice per year are associated with a lower incidence of financial fraud. Klein (2002) and Bedard et al. (2004) find a negative relation between earnings management and audit committee independence and expertise.

Other papers linking governance characteristics with the likelihood of financial restatement yield some mixed results. Abbott et al. (2004) investigate the impact of audit committee characteristics identified by the Blue Ribbon Committee on the likelihood of financial restatements. They find that the presence of a completely independent audit committee, higher frequencies of meetings, and the presence of at least one audit committee member with financial expertise are significantly and negatively related to the likelihood of restatements. Agrawal and Chadha (2005) study the relation between governance characteristics and the incidence of restatements for a sample of 159 U.S. firms restating in 2000 and 2001. Their results suggest that firms with an independent director with financial expertise on their boards or audit committees and whose CEOs do not belong to the founding families are less likely to restate their earnings. Furthermore, they find that the likelihood of a restatement is not related to board or auditor independence, the nonaudit services provided by outside auditors, and the use of Big 5 audit firms. While Raghunandan et al. (2003) find no evidence that restatement firms paid unexpectedly high nonaudit fees, fee ratios or total fees to their

---

[5] We use the term "post-restatement" to refer to the period after the restatement announcement throughout.

[6] Collins et al. (2009) and Burks (2010) report no relation and a positive relation between executive turnover and financial restatements, respectively, for U.S. firms in the post-SOX era.

[7] According to Beasley (1996), outside directors are non-employee directors. Gray directors are outside directors who are related to management such as retired executives of the firm or have business relationships with the company such as consultants, suppliers, attorneys, and investment bankers. Independent directors are outside directors who have no tie to the firm outside of their role as directors.

auditors, Kinney et al. (2004) find a significant association between restatements and tax service fees but not between restatements and either financial information system design and implementation or internal audit services.

2.2. Financial restatements and turnover

Evidence regarding the consequences of financial fraud on the permanency of the firms' executives, directors and auditors is mixed. Beneish (1999) finds no significant differences in CEO turnover among firms that overstated their earnings and control firms that did not. Similarly, Agrawal et al. (1999) find that fraud revelation is not significantly related to an increase in turnover among management or directors.

Srinivasan (2005) reports that outside directors (especially audit committee members) experience higher turnover for income-decreasing restatements. Persons (2006) finds that the revelation of fraud and lawsuits is associated with higher turnover of top-executives (CEO, President, and Board Chair). Desai et al. (2006) report that at least one of the top executives leaves the firm within two years following restatement announcements, and that displaced managers subsequently have difficulty in finding new jobs or accept poorer quality new employment. Arthaud-Day et al. (2006), Agrawal and Cooper (2007) and Collins et al. (2009) report greater CFO turnover for restating versus control firms. Arthaud-Day et al. (2006) also find that restatement firms are more likely to experience turnover of outside directors and audit committee members than control firms. Agrawal and Cooper (2007) find no significant relation between external auditor turnover and restatement announcements. Collins et al. (2009) find that the higher CFO turnover rate related to restatements is not affected by the passage of the Sarbanes–Oxley Act, but terminated CFOs of restating firms suffer greater labor market penalties in the post-Sarbanes–Oxley Act period. Burks (2010) finds that despite the decline in the severity of restatements, disciplinary actions against CFOs have been strengthened after SOX as the relation between CFO turnover and restatements becomes stronger in the post-SOX period. However, CEOs are penalized by reductions in bonus payouts instead of terminations after SOX, which is a less severe penalty commensurate with less severe restatements. Wang and Chou (2011) find that restatement characteristics such as core-earnings and the magnitude of the net income restated significantly affect the likelihood of management turnover. These results suggest that the higher the restatement severity, the higher the likelihood of CEO or CFO turnover.

2.3. Canadian regulations regarding corporate governance

In December 1994, the Toronto Stock Exchange (TSX) Committee on Corporate Governance in Canada (1994) issued a report containing fourteen proposed guidelines for effective corporate governance. The TSX requires all listed corporations to disclose on an annual basis their approach to corporate governance with reference to the TSX Guidelines. According to the guidelines, "an unrelated director is a director who is free from any interest and any business or other relationship which could, or could reasonably be perceived to, materially interfere with the director's ability to act with a view to the best interests of the corporation".

In the aftermath of the accounting scandals, significant developments occurred in corporate governance, such as the enactment of the Sarbanes–Oxley Act of 2002 that imposes corporate governance requirements on all the companies whose securities are listed on stock exchanges in the United States. In Canada, the Canadian Securities Administrators also reviewed existing corporate governance matters and recommended changes to the existing TSX guidelines. In April 2005, the Ontario Securities Commission (OSC) approved amendments to Multilateral Instrument 52-110 *Audit Committees* (MI 52-110) which came into force on June 30, 2005. The OSC also approved National Instrument 58-101 *Disclosure of Corporate Governance Practices* (NI 58-101) and National Policy 58-201 *Corporate Governance Guidelines* (NP 58-201). The instrument and the policy replaced the corporate governance guidelines imposed by the TSX, and came into force on June 30, 2005. National Instrument 58-101 requires the corporation to identify directors as being independent or not independent (as defined in MI 52-110). A director is independent if the member has no direct or indirect material relationship with the company. A material relationship is a relationship which could, in the view of the company's board of directors, reasonably interfere with the exercise of a member's independent judgment.[8]

3. Sample and data

Restatement announcements for Canadian companies are identified using searches of Lexis-Nexis News Wires for the ten-year period from January 1997 to December 2006. Key word searches are performed using "restate," "restates," "restated," "restating," or "restatement" as well as other variations such as "adjust" and "amend" and "revise" within 50 words of "financial statement" or "earnings." Restatement announcements are excluded if they result from discontinued operations, stock splits, stock dividends, mergers and acquisitions,[9] changes in business segment definition, changes made for presentation purposes, and changes in currency of reporting (for example, converting from Canadian to U.S. dollars). Restatements due to changes in accounting policy also are excluded as a general rule because they represent normal corporate activities which do not involve accounting fraud or errors.[10]

---

[8] The meaning of independent is stricter than the meaning of unrelated. An independent director must be an unrelated director, but an unrelated director is not necessarily an independent director.

[9] For example, a firm restates its financial statements after completion of a merger where the merger is accounted for as a pooling of interests.

[10] We exclude firms adopting new accounting recommendations by the Canadian Institute of Chartered Accountants (CICA), Financial Accounting Standards Board (FASB) or the Emerging Issues Task Force (EITF). However, we include restatement announcements resulting from SEC clarifications of revenue recognition in financial statements (SEC Staff Accounting Bulletin No. 101) and lease accounting for operating lease (Feb. 7, 2005, letter from SEC's Chief Accountant to American Institute of Certified Public Accounts clarifying SEC staff's interpretation of certain accounting issues and their application under GAAP relating to operating leases). To our knowledge, there are no restatements resulting from the changes of Canadian regulations.

Our initial sample consists of 231 restatement announcements for firms listed on the Toronto Stock Exchange (TSX). The initial sample is reduced to 180 restatements after eliminating six firms with insufficient daily stock returns and closing prices in the Canadian Financial Markets Research Center (CFMRC) database, four firms with simultaneous trading halts and subsequent delistings, eighteen income funds, fifteen subsequent restatements (i.e., after keeping the first restatement announcement) for firms that had multiple restatement announcements during the 250 trading days used for analysis purposes,[11] and eight firms with unavailable proxy statements or with first proxy statements filed in the System for Electronic Document Analysis and Retrieval (SEDAR) whose dates follow the restatement announcements.

Following Agrawal et al. (1999), Agrawal and Chadha (2005) and Young et al. (2008), we match each restating firm with a unique control firm. The match is chosen so that it (1) has the same two-digit Compustat primary Standard Industrial Classification (SIC) industry code,[12] (2) has the closest market capitalization to the restating firm at the end of the fiscal year before the year of the restatement announcement,[13] and (3) did not announce any restatement in the two years preceding the restatement by its matched firm. A replacement control firm is selected if there is a restatement announced within the preceding 24 months. We add an additional requirement stating that the match firm has proxy statements available in SEDAR for the years for which such data are available for the restating firm to ensure that turnover data are comparable between sample and control firms. Market capitalization is measured as the monthly close price times the number of shares outstanding, both of which are obtained from CFMRC. The procedure reduces our final sample to 177 sample firms and 177 control firms.

Summary characteristics for the restating firms differentiated by the reason for the restatement, the parties initiating the restatement and industry groups based on primary two-digit SIC codes are reported in Table 1. Because some firms report multiple reasons for their restatements, the total number of reasons reported in Panel A exceeds the total sample size. Cost or expense is the most common reason (25.5%), followed by other (23.4%) and revenue recognition (18.1%). The frequencies differ from those reported for U.S. restatements (e.g., Anderson and Yohn, 2002; Hribar and Jenkins, 2004; Palmrose et al., 2004), where revenue recognition is the largest restatement category. Based on Panel B of Table 1, the initiators are unknown for 42.9% of the restatements, followed by company-initiated restatements for 33.3% of the restatements.

Based on Panel C of Table 1, 33.3% of the firms are in manufacturing, followed by 23.2% and 19.8% of the firms in mining and services, respectively. There are no financial restatements by firms in agriculture, forestry, and fisheries. The concentration of restating firms in several industries are consistent with the industry structure of the Canadian capital market where the majority of publicly traded firms operate in several key sectors, such as mining, oil and gas, and financial services (Nicholls, 2006). Compared to U.S. restating firms, a high percent (23.2%) of Canadian restating firms is in mining (versus 3% in Palmrose et al., 2004; and 0.6% in Agrawal and Chadha, 2005, respectively).

Based on Panel D of Table 1, restatements increase sharply from 2001, and 61.6% of the restatements in our sample were announced in 2004, 2005 and 2006. In a study commissioned by the U.S. Treasury Department to investigate the increase in public company restatement activity over the decade from 1997 to 2006, Scholz (2008) finds a similar increase in the number of restatements by U.S. exchange-listed firms from 69 in 1997 to 239 in 2001 to 309 in 2002 to 753 in 2005 before dropping to 594 in 2006.[14] She attributes this to various disparate factors such as the hang-over from the 2001 recession in the U.S., a period of intense focus on accounting issues and turmoil in the accounting profession after Enron announced its restatement in November 2001, and the enactment of SOX on July 30, 2002 and other subsequent regulatory changes. Except for the avoidance of a similar recession, most of these factors contributing to an increase in the incidence of financial restatements apply to Canadian firms, including Air Canada's restatement in 2001, Corel's restatement in 2001 and Nortel's announcement of its first of three restatements in 2003. The higher number of restatements in the post-SOX period relative to the pre-SOX period in both countries may support the argument of Hyndman (2003, p. 5), the former Chair of the B.C. Securities Commission, that

> "We cannot build investor confidence by adding rules that make regulation more complex and burdensome but don't really improve investor protection. Indeed, this approach could backfire if investors were to relax their vigilance, assuming the new rules had made the markets safer. Investors would ultimately be disillusioned, and lose confidence again, when they realize that the new rules had not delivered what was promised."

Based on Panel E of Table 1, sample firms restate more than one year of financial statements (mean = 1.48). Following Palmrose et al. (2004) and Srinivasan (2005), the magnitude or size of the restatements is measured as the cumulative effect of a restatement on net income. Using data collected from the financial statements and the restatement announcements, the size of a restatement is calculated as the restated net income less originally reported net income for each restated period, and then summed over all the restated periods.[15] The restatements, on average, reduce the annual net income by 363.1 million dollars.

---

[11] To illustrate using the case of Nortel, we include the first restatement in October 2003 and the third restatement in March 2006, but not the second restatement in March 2004.

[12] We use Bloomberg or Factiva to obtain any missing SICs for restating firms.

[13] For six restating firms who started trading on the TSX later than the end of the fiscal year before the year of the restatement announcements, the match date is the first trading month in the CFMRC.

[14] Using our time period, she reports 692 restatements for the period 1998–2001 and 2240 restatements for the period 2002–2006 for exchange-listed U.S. firms.

[15] If the firm uses the U.S. dollar as the reporting currency, dollar values are converted to Canadian dollars using the IBES daily exchange rate.

Table 1
Descriptive statistics for restating firms. This table reports the characteristics of 177 Canadian financial restatements during the period 1997–2006. The total number of reasons exceeds the total number of restatements because some restatements involve more than one reason.

Panel A: Reason for restatement		
Reason for restatement	Number	Frequency (%)
Cost or expense	48	25.53
Other	44	23.40
Revenue recognition	34	18.09
Securities related	28	14.89
Reclassification	12	6.38
Restructuring, assets or inventory	12	6.38
Acquisition or merger	6	3.19
Related-party transaction	2	1.06
In-process research and development	2	1.06
Total	188	100.0

Panel B: Initiating parties of the restatements		
Initiators	Number	Frequency (%)
Company	59	33.33
Auditor	15	8.47
Company and auditor	17	9.60
Regulator	4	2.26
Other	6	3.39
Unknown	76	42.94
Total	177	100.0

Panel C: Industry distribution		
Industry and 2 digit SIC code	Number	Frequency (%)
Agriculture, forestry, and fisheries (01–09)	0	0.00
Mining (10–14)	41	23.16
Construction (15–17)	0	0.00
Manufacturing (20–39)	59	33.33
Transportation, communications, & utility services (40–49)	15	8.47
Wholesale Trade (50–51)	3	1.69
Retail Trade (52–59)	9	5.08
Finance, insurance and real estate (60–67)	15	8.47
Services (70–89)	35	19.77
Total	177	100.0

Panel D: Distribution of restatements by year		
Year	Number	Frequency (%)
1997	1	0.56
1998	4	2.26
1999	10	5.65
2000	7	3.95
2001	19	10.73
2002	12	6.78
2003	15	8.47
2004	29	16.38
2005	35	19.77
2006	45	25.42
Total	177	100.0

Panel E: Other characteristics of restatements		
	Mean	Median
Number of years restated	1.480	1
Size of restatement (millions of dollars)	−363.065	−0.518
Size of restatement/total assets	−0.027	−0.004

When the size of a restatement is scaled by the total assets in the year end prior to the restatement announcement, an average restatement represents about 2.7% of total assets.

The financial data for restating firms and control firms are obtained from the Compustat database. Missing data (except for sales growth) are obtained from Mergent online or hand collected from the financial statements deposited with SEDAR (as are the governance variables from the proxy statements around the restatement announcements).

Because the dates when the CEO, President, Chair and CFO left their positions are usually available, we track the turnover of these persons within 24 months following the restatement announcements.[16] The dates of changes in unrelated directors and audit committee members are usually unavailable as these changes are usually only disclosed in the annual proxy statement. Thus, we track the turnover of unrelated directors and audit committee members using the subsequent two proxy statements issued after the restatement announcements. We define top executive turnover as the turnover of CEOs, Presidents and Board Chairs.[17] Unrelated directors are considered to have turned over if the director leaves the Board or becomes a related director. Audit committee turnover occurs if a committee member leaves the board or the member still stays on the board but no longer is a member of the audit committee. If a person leaves a position due to retirement or death, we do not consider it to be turnover for the purposes of this study.

4. Governance characteristics and restatement incidence

4.1. Univariate analysis

Table 2 presents the summary statistics for the financial and governance variables for the restating and matched control firms. All the dollar values are adjusted for inflation to constant 2002 dollars using the consumer price index. Both the median sales and total assets of control firms are significantly smaller than restating firms. Canadian restating firms are smaller compared to U.S. restating firms. To illustrate, the mean total assets (market caps) are 2133 (1367) million Canadian dollars for the Canadian restating firms versus 4219 (4736) million U.S. dollars in Agrawal and Chadha (2005) although the Canadian dollar traded at a substantial discount to the U.S. dollar over our sample period. The mean (median) leverage ratio is about 0.48 (0.48) for restating firms and 0.41 (0.39) for control firms. The mean (median) ROA is about −9.56% (−1.53%) for restating firms and −5.0% (0.97%) for control firms. Similar to Desai et al. (2006), we find that the restating firms are significantly more leveraged and have worse performance than control firms prior to the restatement announcements. Restating firms also have a higher sales growth rate, but the difference is not statistically significant. The mean (median) market capitalization in Canadian dollars is about 1366.50 (131.09) million for the restating firms and 797.50 (108.82) for the control firms. No differences are significant at the 5% level, suggesting that our matching procedure was successful. While the restating firms have a smaller board size, a lower proportion of unrelated directors, and more board meetings than the control firms, these differences are not statistically significant.

The mean audit committee size (3.31 members) for control firms is not significantly bigger than that for restating firms (3.28 members). The median proportion of unrelated audit committee members is significantly higher for control firms. The mean and median number of meetings held by the audit committee annually is significantly higher for restating firms. As in Abbott et al. (2004) and Agrawal and Chadha (2005), we define directors as having financial expertise if they hold a CPA, CFA, CA, investment banker or venture capitalist designation, or have served as chief financial officer, vice president of finance, controller or treasurer. The mean proportion of firms whose audit committees have at least one director with financial expertise is about 75% for restating and 83% for control firms, respectively. Both the differences in means and medians are statistically significant at the 10% level.

The mean proportion of restating (control) firms whose CEO is also the Board Chair is 0.34 (0.40). The mean (median) tenure of the CEO on the board is 8.53 (6) years for restating and 9.39 (7) years for the control firms. The mean proportion of firms whose CEOs belong to the founding family is 37.3% and 32.8%, respectively, for the restating and control firms. However, none of these differences are statistically significant.

The ownership of restating and control firms is also similar. Blockholder ownership is defined as the percentage of voting rights held by outside blockholders with at least 10% of the voting rights attached to any class of voting securities who are unaffiliated with management.[18] For a firm with a dual-class structure (i.e. subordinate and multiple voting shares), blockholder ownership is calculated as the sum of multiple voting shares times the number of votes each multiple voting share carries and subordinate voting shares owned by blockholders, which is divided by the sum of total outstanding multiple voting shares times the number of votes each multiple voting share carries and all subordinate voting shares. Management ownership is the percentage of voting rights held by management (for example CEO, President, Executive Vice President, Vice President, Chief Financial Officer) who serves on the board. We find that control firms have higher (not statistically significant) ownership by blockholders, managements, related and unrelated directors and top three persons (CEO, President and Board Chair) than restating firms. However, restating firms have significantly higher CEO ownerships than control firms. The number of outside blockholders who own 10% or more of the voting rights is significantly higher for control firms (0.75) than for restating firms (0.59).

The proportion of firms whose external auditor is a Big 5 auditing firm (Arthur Andersen, Deloitte Touche Tohmatsu, Ernest & Young, KPMG, and PricewaterhouseCoopers) is significantly higher for control firms (0.91) than restating firms (0.83). The mean

---

[16] If the firm only has a vice president of finance, we consider this position as the CFO.

[17] If the person is both the CEO (or President) and Chairperson before the restatement and only the CEO (or President) after the restatement, we consider this to be turnover.

[18] The results are similar if we use five percent as the criteria for blockholder ownership for firms that use five percent in their proxy statements. Outside blockholders do not include clearing agencies such as Cede & Co. and CDS & Co. who are only nominees and not beneficial owners of common shares. Companies usually have no knowledge of the beneficial owners of these shares.

Table 2

Summary statistics for sample and control firms. This table reports summary statistics for both financial and governance variables for restating and control firms. Variables are defined in Sections 4.3 and 5.2 of the paper. Sales, total assets and market Cap are in millions of 2002 dollars. Leverage is measured as total liabilities divided by total assets. Sales growth and Return on Assets (ROA) is in percent. "prop." is the proportion in decimal. *p*-value is for a two-tailed *t*-test for the difference in means and Wilcoxon signed rank test for differences in medians, respectively, between the restatement firms and the control firms. ***, ** and * indicate significance at 0.01, 0.05 and 0.10 levels, respectively.

Variable	Mean			Median			Sample Size
	Sample	Control	*p*-Value	Sample	Control	*p*-Value	
Sales	1214.920	1446.820	0.555	70.170	57.520	0.024**	177
Total assets	2133.040	5529.820	0.422	124.330	101.820	0.000***	177
Leverage	0.480	0.411	0.007***	0.476	0.385	0.012***	177
Sales growth	41.569	21.895	0.183	14.403	11.408	0.519	110
ROA	−9.555	−4.954	0.044**	−1.533	0.972	0.100*	177
Market cap	1366.503	797.500	0.090*	131.093	108.824	0.121	177
Board size	7.785	7.780	0.979	7.000	7.000	0.907	177
Proportion of unrelated directors	0.658	0.677	0.270	0.667	0.667	0.379	177
Number of board meetings yearly	8.536	8.478	0.947	8.000	7.000	0.973	69
Audit committee size	3.282	3.305	0.768	3.000	3.000	0.878	177
Proportion of unrelated directors on audit committee	0.898	0.922	0.223	1.000	1.000	0.039**	177
Number of audit committee meetings	5.467	4.644	0.080*	4.000	4.000	0.093*	90
Financial expert on audit committee dummy (1 if ≥1 financial expert, 0 otherwise)	0.751	0.831	0.066*	1.000	1.000	0.066*	177
CEO is board chair (prop.)	0.339	0.401	0.245	0.000	0.000	0.246	177
CEO tenure on board (years)	8.525	9.394	0.358	6.000	7.000	0.247	160
CEO belongs to the founding family (1 if yes, 0 otherwise)	0.373	0.328	0.340	0.000	0.000	0.343	177
# of outside blockholders with ≥10% of voting shares	0.588	0.751	0.073*	0.000	1.000	0.068*	177
Blockholder ownership (prop.)	0.107	0.139	0.128	0.000	0.010	0.103	177
CEO ownership (prop.)	0.087	0.118	0.088*	0.014	0.022	0.062*	161
Management ownership (prop.)	0.093	0.113	0.390	0.014	0.017	0.289	112
Related directors' ownership (prop.)	0.129	0.139	0.726	0.027	0.022	0.618	92
Unrelated directors' ownership (prop.)	0.036	0.044	0.503	0.003	0.006	0.375	141
Top3 ownership (prop.)	0.096	0.143	0.092*	0.025	0.033	0.132	92
Big 5 firm dummy (1 if auditor is big 5 firm, 0 otherwise)	0.825	0.910	0.016**	1.000	1.000	0.014**	177
Non-audit fees/total fees	0.295	0.336	0.132	0.282	0.331	0.126	96

non-audit fees paid to the external auditor at 30% and 34% of the total audit fees for the restating and control firms, respectively, are not significantly different.

4.2. Correlations

Table 3 reports the correlations between the independent and explanatory variables. The likelihood of restatement (RESTATE) is significantly and positively correlated with leverage and sales growth and negatively correlated with return on assets (ROA) and abnormal returns (CAR). The likelihood of restatement is lower when the audit committee has at least one director with financial expertise (EXPERT) and the external auditor is a Big 5 auditing firm (BIG5). The proportion of unrelated directors (PUNRELDIR) is significantly and positively correlated with the proportion of unrelated audit committee members (PUNRELAUD) and outside blockholder ownership (BLOCKHLD), and is higher when the external auditor is a Big 5 firm (BIG5). The proportion of unrelated directors (PUNRELDIR) is significantly and negatively correlated with sales growth and management ownership, and is lower when the CEO also chairs the board (CEOCHAIR) or the CEO belongs to the founding family (CEOFOUND). The proportion of

Table 3

Correlation matrix. This table reports the correlations between the regression variables. Variables are defined in Sections 4.3 and 5.2 of the paper. ***, ** and * indicate significance at 0.01, 0.05 and 0.10 levels, respectively.

Variable	RESTATE	PUNRELDIR	PUNRELAUD	EXPERT	CEOCHAIR	CEOFOUND	BLOCKHLD	MGMTOWN	LEVERAGE	BIG5	GROWTH	ROA
PUNRELDIR	−0.06											
PUNRELAUD	−0.06	0.54***										
EXPERT	−0.10*	0.06	0.21***									
CEOCHAIR	−0.06	−0.14**	−0.04	−0.07								
CEOFOUND	0.05	−0.17***	0.04	−0.11**	0.31***							
BLOCKHLD	−0.09	0.25***	0.05	−0.01	−0.14***	−0.13***						
MGMTOWN	−0.07	−0.35***	−0.14**	−0.14**	0.41***	0.35***	−0.15***					
LEVERAGE	0.12**	0.04	−0.03	0.09	0.06	−0.02	0.06	0.08				
BIG5	−0.12**	0.17***	0.13**	0.09	0.01	−0.01	0.03	−0.11*	0.04			
GROWTH	0.10*	−0.12**	−0.13**	0.02	−0.03	0.05	0.01	−0.00	−0.03	0.03		
ROA	−0.10*	0.05	0.10*	0.02	−0.08	−0.02	−0.03	0.02	−0.15***	0.02	−0.24***	
CAR	−0.17***	0.02	0.05	0.00	0.05	0.02	0.00	0.05	−0.09*	−0.10*	−0.15***	0.08

unrelated audit committee members (PUNRELAUD) is significantly and negatively correlated with sales growth and management ownership, and is higher when the audit committee has at least one director with financial expertise (EXPERT) and the external auditor is a Big 5 firm (BIG5). When the CEO belongs to the founding family (CEOFOUND) and the firm has more management ownership (MGMTOWN), it is less likely that the audit committee has at least one director with financial expertise (EXPERT). A CEO who is also the Board Chair is more likely to belong to the founding family (CEOFOUND) and have less blockholder ownership (BLOCKHLD) and more management ownership (MGMTOWN). When the CEO belongs to the founding family, the shares owned by outside blockholders are lower (BLOCKHLD) and shares owned by management are higher (MGMTOWN). Management ownership is lower when the external auditor is a Big 5 firm (BIG5) and shares owned by blockholders are higher (BLOCKHLD). Both Leverage and sale growth are negatively related to return on assets (ROA) and abnormal returns (CAR).

4.3. Logistic regression

As a robustness test of our univariate analysis, we estimate the following logistic regression with robust standard errors to examine the relation between governance characteristics and restatement announcements.

$$\text{RESTATE} = f(\text{PUNRELDIR or PUNRELAUD, EXPERT, CEOCHAIR, CEOFOUND, BLOCKHLD, MGMTOWN, BIG5,}$$
$$\text{LEVERAGE, GROWTH, ROA, CROSSLIST, MKTCAP, INDUSTRY DUMMIES)} \quad (1)$$

where RESTATE is a dummy variable that is equal to one if the firm is a restating firm and zero if the firm is a control firm. PUNRELDIR is the proportion of directors who are unrelated. PUNRELAUD is the proportion of directors in the audit committee who are unrelated. EXPERT is a dummy variable that is equal to one if the audit committee includes at least one director who is a financial expert. CEOCHAIR is a dummy variable that is equal to one if the CEO is also the Board Chair and zero otherwise. The board's monitoring function is less effective when the CEO is also the Board Chair (Beasley, 1996; Dechow et al., 1996; Jensen, 1993), so we hypothesize a positive relation between CEOCHAIR and the likelihood of restatement. CEOFOUND is a dummy variable that is equal to one if the CEO belongs to the founding family of the firm and zero otherwise. Dechow et al. (1996) argue that CEOs are less accountable to the board when they are also the company founders. We hypothesize that the likelihood of restatement is higher for firms with CEOs that belong to the founding family.

BLOCKHLD is the percentage of voting rights held by outside blockholders with at least 10% of the voting rights attached to any class of voting securities who are unaffiliated with management. According to Shleifer and Vishny (1986) and Beasley (1996), large outside blockholders have greater incentives to monitor management and therefore serve as an additional monitoring mechanism. We hypothesize a negative relation between blockholder ownership and the likelihood of restatement.

MGMTOWN is the percentage of voting rights held by managements who serve on boards. Stock ownership held by management could motivate management to increase stock value and therefore reduce the agency problems between managements and shareholders (Jensen and Meckling, 1976) or to artificially inflate the stock values that could lead to material management fraud (Loebbecke et al., 1989). Therefore, we do not hypothesize a direction for the relation between management ownership and the likelihood of restatement.

BIG5 is a dummy variable that is equal to one if the firm's external auditor is a Big 5 auditing firm and zero otherwise. Largest audit firms are associated with lower incidence of fraud as they are quality-differentiated suppliers (Carcello and Nagy, 2004; Palmrose, 1988). We hypothesize a negative relation between BIG5 and the incidence of restatement.

LEVERAGE is calculated as the ratio of total liabilities divided by total assets in the fiscal year before the restatement announcements. Leverage is a proxy for the firm's demand for external financing which may explain why earnings are manipulated to avoid debt covenant violations (Dechow et al., 1996). We therefore hypothesize a positive relation between leverage and the likelihood of restatement. Growth is calculated as the compound growth rate of sales in the three years before the year of a restatement announcement. Richardson et al. (2002) note that restatement firms are associated with high growth rates because they are under great pressure to inflate the earnings to meet the expectations of analysts. We hypothesize a positive relation between growth rates and the incidence of restatement. ROA is calculated as the ratio of income before extraordinary items divided by total assets in the year end before the restatement announcement. Agrawal and Chadha (2005) argue that the desire to boost poor performance may cause firms to adopt aggressive accounting practices. We therefore hypothesize a negative relation between ROA and the likelihood of restatement.

CROSSLIST is a dummy variable that is equal to one if the firm is cross-listed on a U.S. trade venue and zero otherwise. We control for the impact of cross-listing on the likelihood of restatements because about 37.3% of the sample firms (66 firms) and 21.5% of the control firms (38 firms) are cross-listed on U.S. trade venues. We also control for firm size using market capitalization (MKTCAP) for the year end before the restatement announcement. To control for industry effects, INDUSTRY DUMMIES are included and are equal to one if the firm belongs to one of six industries (Mining, Manufacturing, Transportation, Wholesale trade, Retail trade, and Finance) and zero otherwise.

The logistic regression results are reported in Table 4. Both the coefficient estimates and marginal effects are reported. A marginal effect is calculated as the partial derivative of the restatement probability with respect to the independent variable, which measures the change in the restatement probability for a unit change in the independent variable. Unlike the case for U.S. restating firms (Agrawal and Chadha, 2005), the proportion of unrelated directors is marginally and negatively related to the likelihood of Canadian restatements. This suggests that unrelated directors can strengthen a firm's monitoring mechanisms and thereby reduce the likelihood of restatements. Consistent with the U.S. findings of Abbott et al. (2004) and Agrawal and Chadha (2005), a restatement is

Table 4
Logistic regression of the likelihood of restatement.

This table reports the results of the following logistic regression:

$$RESTATE = f(PUNRELDIR \text{ or } PUNRELAUD, \text{ EXPERT, } CEOCHAIR, \text{ CEOFOUND, BLOCKHLD, MGMTOWN, BIG5, LEVERAGE, GROWTH, ROA,}$$
$$CROSSLIST, MKTCAP, \text{ INDUSTRY DUMMIES})$$

RESTATE is a dummy variable that is equal to one if the firm is a restating firm and zero if the firm is a control firm. PUNRELDIR is the proportion of directors who are unrelated. PUNRELAUD is the proportion of directors in the audit committee who are unrelated. EXPERT is a dummy variable that is equal to one if the audit committee includes at least one director who is a CPA, CFA, CA, investment banker or venture capitalist, or has served as chief financial officer, vice president of finance, controller or treasurer. CEOCHAIR is a dummy variable that is equal to one if the CEO is also the board chair and zero otherwise. CEOFOUND is a dummy variable that is equal to one if the CEO belongs to the founding family of the firm and zero otherwise. BLOCKHLD is defined as the percentage of voting rights held by outside blockholders with at least 10% of the voting rights attached to any class of voting securities who are unaffiliated with management. MGMTOWN is the percentage of voting rights held by management who serves on the board. BIG5 is a dummy variable that is equal to one if the firm's external auditor is a Big 5 auditing firm and zero otherwise. LEVERAGE is calculated as the ratio of total liabilities divided by total assets. Growth is calculated as the compound growth rate of sales in the three years preceding the year of restatement announcement. ROA is calculated as the ratio of income before extraordinary items divided by total assets in the year end before the restatement announcement. CROSSLIST is a dummy variable that is equal to one if the firm is cross-listed on a U.S. trade venue and zero otherwise. MKTCAP is the market capitalization in the year end before the restatement announcement. INDUSTRY DUMMIES are equal to one if the firm belongs to one of the six industries (Mining, Manufacturing, Transportation, Wholesale trade, Retail trade, and Finance) and zero otherwise. ***, ** and * indicate significance at 0.01, 0.05 and 0.10 levels, respectively.

	Model 1			Model 2		
Independent variable	Coefficient	*p*-Value	Marginal effect	Coefficient	*p*-Value	Marginal effect
Intercept	1.878	0.227	0.379	0.931	0.543	0.191
PUNRELDIR	−1.892*	0.095	−0.382			
PUNRELAUD				0.233	0.805	0.048
EXPERT	−1.056**	0.024	−0.213	−1.068**	0.029	−0.218
CEOCHAIR	−0.209	0.572	−0.042	−0.126	0.726	−0.026
CEOFOUND	0.142	0.688	0.029	0.175	0.627	0.036
BLOCKHLD	−1.681*	0.060	−0.339	−2.030**	0.024	−0.415
MGMTOWN	−2.248**	0.027	−0.454	−1.942*	0.057	−0.397
BIG5	−1.629***	0.006	−0.329	−1.606***	0.006	−0.328
LEVERAGE	1.018	0.128	0.206	1.050	0.120	0.214
GROWTH	0.402**	0.012	0.081	0.402**	0.015	0.082
ROA	−1.441	0.105	−0.291	−1.299	0.158	−0.265
CROSSLIST	0.983**	0.025	0.198	0.913**	0.031	0.186
MKTCAP	0.071	0.443	0.014	0.041	0.636	0.008
INDUSTRY DUMMIES	Yes			Yes		
Pseudo R^2	0.177			0.167		
Observations	214			214		

less likely for Canadian firms whose audit committee has at least one director with financial expertise (p-value < 0.05 for both models). Firms whose audit committees have at least one director with financial expertise are about 21% and 22% less likely to restate for model 1 and model 2, respectively. Unlike Agrawal and Chadha (2005) and Beasley (1996), the likelihood of restatement is significantly and negatively related to outside blockholder ownership. An increase of 1% in blockholder ownership reduces the likelihood of restatement by 34% and 42% for model 1 and model 2, respectively. This relationship is consistent with the argument of Shleifer and Vishny (1986) and Beasley (1996) that large outside blockholders have greater incentives to monitor managers. Similar to U.S. findings (Abbott et al., 2004; Agrawal and Chadha, 2005), the likelihood of restatement is higher but not statistically significant for firms who have a lower proportion of unrelated audit committee members and whose CEOs are also the chairs of their boards. Contrary to Abbott et al. (2004), the likelihood of restatement is significantly and negatively related to management stock ownership. An increase of 1% in management stock ownership reduces the likelihood of restatement by 45% and 40% for model 1 and model 2, respectively. This finding is consistent with the view of Jensen and Meckling (1976) that higher management stock ownership motivates management to increase firm value, and therefore reduces the agency problems between management and shareholders. In contrast to Agrawal and Chadha (2005), the incidence of restatement is lower for firms whose external auditor is a Big 5 auditing firm (significant at 1% level). Firms whose external auditor is a Big 5 auditing firm are about 33% less likely to restate for both models.

The incidence of restatement is higher for firms with higher leverage ratios, but not statistically significant. Thus, we do not find evidence supporting the argument of Dechow et al. (1996) that the leverage ratio is a proxy for demand for external financing which may explain why highly levered firms tend to manipulate earnings to raise external financing at lower cost. Sales growth is significantly and positively related to the incidence of restatement (p-value < 0.05 for both models). An increase of 1% in the growth rate of sales increases the likelihood of restatement by 8% for both models. This relationship between sales growth and the incidence of restatement is consistent with the finding for Taiwanese firms (Young et al., 2008), but not for U.S. restating firms (Abbott et al., 2004; Agrawal and Chadha, 2005). Consistent with the findings of Abbott et al. (2004) but contrary to the findings of Agrawal and Chadha (2005), the likelihood of restatement is not significantly higher for firms whose CEO belongs to the

founding family. Firms are about 20% and 19% more likely to restate when they are cross-listed on U.S. trade venues (p-value<0.05 for both models). The likelihood of restatement is not related to ROA or market capitalization.

5. Financial restatements and turnover

5.1. Univariate analysis

Table 5 reports the summary statistics on the turnover rates for restating and control firms. The sample sizes for CEO, President, Board Chair, and CFO turnover rates are smaller since some firms do not have individuals that occupy positions with those titles. The CEO turnover rate for restating firms and control firms is 0.337 and 0.160 in years (1, 2), respectively, and their difference is statistically significant (p-value<0.01). The higher turnover rate for restating firms over two years mainly occurs in the first year post-restatement (i.e., $+1$). By one year after the restatement announcements, 25.2% and 8.6% of the CEOs turn over in restating and control firms, respectively. The CEO turnover rates are not statistically higher for restating firms than control firms during the second year after the restatement announcements. Similarly, the turnover rates of Presidents and CFOs are significantly higher for restating firms, compared with control firms in years $+1$ and (1, 2). The turnover rates of Board Chairs are higher (significant at the 10% level) for restating firms than for control firms in year $+1$, but not significantly higher in year $+2$ and (1, 2). Turnover rates of individuals holding the top three positions for restating and control firms are 0.339 and 0.155 in year $+1$, and 0.435 and 0.327 in year (1, 2), respectively. The differences are significant at the 1% and 5% levels, respectively. Restating firms also experience (not significantly) higher turnover rates for unrelated directors and audit committee members. The external auditor turnover rate is significantly higher (p-value<0.01) for restating versus control firms in years $+1$, $+2$ and (1, 2).

Table 5

Turnover for sample and control firms. This table reports the mean turnover rates of the CEO, President, Board Chair, top three executives, CFO, unrelated directors, audit committee members and external auditor for sample and control firms during years $+1$, $+2$ and (1, 2) following the restatement announcements. *t*-test and Wilcoxon test *p*-values are for differences in means and medians, respectively. ***, ** and * indicate significance at 0.01, 0.05 and 0.10 levels, respectively.

Year	Restate	Control	*t*-Test *p*-value	Wilcoxon test *p*-value	Sample size
Panel A: Chief Executive Officer (CEO) turnover					
$+1$	0.252	0.086	0.000***	0.000***	163
$+2$	0.128	0.099	0.435	0.444	141
(1,2)	0.337	0.160	0.000***	0.000***	163
Panel B: President turnover					
$+1$	0.295	0.089	0.000***	0.000***	146
$+2$	0.151	0.175	0.614	0.619	126
(1,2)	0.377	0.240	0.009***	0.008***	146
Panel C: Board Chair turnover					
$+1$	0.131	0.069	0.072*	0.071*	145
$+2$	0.115	0.077	0.299	0.308	130
(1,2)	0.216	0.142	0.101	0.102	148
Panel D: Top three executives (CEO, President, Board Chair) turnover					
$+1$	0.339	0.155	0.000***	0.000***	168
$+2$	0.214	0.214	1.000	1.000	145
(1,2)	0.435	0.327	0.041**	0.041**	168
Panel D: Chief Financial Officer (CFO) turnover					
$+1$	0.309	0.125	0.000***	0.000***	152
$+2$	0.212	0.159	0.276	0.280	132
(1,2)	0.431	0.248	0.001***	0.001***	152
Panel E: Unrelated directors turnover					
$+1$	0.494	0.488	0.919	0.919	168
$+2$	0.421	0.386	0.537	0.539	145
(1,2)	0.649	0.619	0.549	0.551	168
Panel E: Audit committee turnover					
$+1$	0.476	0.470	0.916	0.916	168
$+2$	0.400	0.324	0.193	0.194	145
(1,2)	0.637	0.637	1.000	1.000	168
Panel F: External Auditor turnover					
$+1$	0.179	0.036	0.000***	0.000***	168
$+2$	0.097	0.048	0.000***	0.000***	145
(1,2)	0.262	0.077	0.000***	0.000***	168

5.2. Logistic regressions

We perform a multiple regression to examine the turnover of executives, directors and external auditors to control for the other factors that could affect turnover. The following logistic regression is estimated:

$$\text{TURNOVER} = f(\text{RESTATE, PUNRELDIR, BODSIZE, CEOCHAIR, ROA, CAR, CROSSLIST, MKTCAP, INDUSTRY DUMMIES})$$
(2)

where TURNOVER is a dummy variable that is equal to one if a person who holds a senior position (CEO, President, Board Chair, CFO, unrelated director, audit committee) leaves the firm or the external auditor changes within twelve or twenty-four months following a restatement announcement. RESTATE is a dummy variable that is equal to one if the firm is a restating firm and zero if the firm is a control firm. We include a variable PUNRELDIR, which is the proportion of directors who are unrelated, as Jensen (1993) argues that top executive removal is less difficult with higher representations of outside directors on boards. Agrawal and Cooper (2007) also argue that outside directors could prevent auditors from being fired for questioning management. We hypothesize a positive (negative) relation between management (external auditor) turnover and the proportion of directors who are unrelated. Yermack (1996) argues that smaller boards are more effective. Thus, we hypothesize a negative (positive) relation between management (external auditor) turnover and the number of directors on the board (BODSIZE). CEOCHAIR is a dummy variable that is equal to one if the CEO is also the Board Chair and zero otherwise. Beasley (1996) and Dechow et al. (1996) argue that the board is less effective in monitoring when the CEO is also the Board Chair. We hypothesize a negative (positive) relation between management (external auditor) turnover and CEOCHAIR. Following Desai et al. (2006), we include the firm's return on assets (ROA) in the fiscal year prior to the restatement announcement as a measure of prior performance. We hypothesize a negative relation between management (external auditor) turnover and ROA. Similar to Agrawal and Cooper (2007), CAR is the cumulative abnormal return over days [−5, 5] around each restatement announcement.[19] We hypothesize a negative relation between management (external auditor) turnover and abnormal returns based on the finding of Warner et al. (1988) that poor stock performance increases the probability of management changes. The other three control variables, CROSSLIST, MKTCAP and INDUSTRY DUMMIES are as previously defined for Eq. (1).

The results using a logistic regression that controls for other turnover determinants are reported in Table 6. Panels A and B provide the results when the dependent variable is executive or auditor turnover within the first one and two years, respectively, after the restatement announcements. Consistent with the univariate results, the estimated coefficients of RESTATE are positive and significant (*p*-value<0.05) for the turnovers of CEO and CFO for both post-restatement periods (as Agrawal and Cooper, 2007; Collins et al., 2009; Desai et al., 2006 find in the U.S.), and for the President and top three executives only for the first one year post-restatement. We also estimate the marginal effects implied by the restatements. Based on untabulated results and after controlling for other determinants of turnover, the probability of turnover is about 11% (12%), 16% (9%), 13% (5%) and 16% (14%) higher for CEO, President, top three executives, and CFO, respectively, of restating firms than for control firms within the first one (two) years after restatement announcements. This suggests that Canadian restatement announcements are similar to U.S. restatements in that they are significantly related to turnover of executives even after controlling for other determinants of turnover. The evidence is consistent with executives bearing a cost for not avoiding a misstatement of a firm's financial results.

In contrast to Agrawal and Cooper (2007) for U.S. restating firms, external auditor turnover for Canadian restating firms are significantly higher compared to control firms for both post-restatement periods even after controlling for other determinants of turnover. Based on untabulated results, the probability of external auditor turnover is about 15% and 17% higher for restating versus control firms within one year and two years, respectively, after the restatement announcements. This result combined with the previous finding that Canadian firms are more likely to misreport their financial results if their external auditor is not a Big 5 auditor suggests that external auditors play a significant role as watchdogs of the financial reporting activities of Canadian firms. Changing the external auditor when a restatement occurs may help to restore investor confidence in the effectiveness of monitoring by this independent entity.

In contrast to Srinivasan (2005) and Arthaud-Day et al. (2006) for U.S. restating firms, we find no evidence that unrelated directors and audit committee turnover are related to the restatement announcements based on untabulated results that are similar to our previously reported univariate results. Based on untabulated results, restatement announcements are not associated with a higher turnover of Board Chairs.

Turnover is not significantly related to board size, the percentage of voting rights held by outside blockholders with at least 10% of the voting rights for a security class or the proportion of unrelated directors (with the exception of a negative relation with

---

[19] The abnormal return (AR) is calculated using the following dual-beta market model:

$$R_{it} = \alpha_i + \beta_1 R_{mt} + \beta_2 R_{mt} D_1 + \sum_{j=-5}^{5} \gamma_{ij} D_{2j} + \varepsilon_{it}$$

where R_{it} is the excess return on stock i for trading day t, and is equal to the return for stock i minus the Canadian one-month T-bill rate, R_{mt} is the excess return for the market, where the market return is proxied by the return on the S&P/TSX Composite Index, D_1 is a dummy variable equal to one on and after the restatement announcement and zero otherwise to account for the possibility that the beta of the firm might change due to the restatement announcement, D_{2j} is the event dummy variable equal to one for stock i for day j in the event window that covers the eleven days centered on the restatement announcement and zeros otherwise. The ARs are estimated using 250 trading days before and 100 trading days after the announcement day.

Table 6
Logistic regression for management and auditor turnover.

This table reports the results for the following logistic regression:

$$TURNOVER = f(RESTATE, \; PUNRELDIR, \; BODSIZE, \; CEOCHAIR, \; BLOCKHLD, \; ROA, \; CAR, \; CROSSLIST, \; MKTCAP, \; INDUSTRY \; DUMMIES.$$

RESTATE is a dummy variable that is equal to one if the firm is a restating firm and zero if the firm is a control firm. PUNRELDIR is the proportion of directors who are unrelated. BODSIZE is the number of directors on the board. CEOCHAIR is a dummy variable that is equal to one if CEO is also the board chair and zero otherwise. BLOCKHLD is the percentage of voting rights held by outside blockholders with at least 10% of the voting rights attached to any class of voting securities who are unaffiliated with management. ROA is return on assets in the year prior to restatement announcements. CAR is the cumulative abnormal return over days [−5, 5] around restatement announcements. CROSSLIST is a dummy variable that is equal to one if the firm is cross-listed on a U.S. trade venue and zero otherwise. MKTCAP is the market capitalization in the year end before the restatement announcement. INDUSTRY DUMMIES are equal to one if the firm belongs to one of the six industries (Mining, Manufacturing, Transportation, Wholesale trade, Retail trade, and Finance) and zero otherwise. ***, ** and * indicate significance at 0.01, 0.05 and 0.10 levels, respectively.

Independent variable	CEO turnover	President turnover	Top 3 turnover	CFO turnover	Auditor turnover
Panel A: Year +1					
Intercept	−3.146	−0.710	−2.934*	−3.796**	5.338**
	(0.106)	(0.744)	(0.085)	(0.031)	(0.040)
RESTATE	0.934**	1.240***	0.815***	1.050***	1.888***
	(0.015)	(0.001)	(0.005)	(0.001)	(0.000)
PUNRELDIR	−0.0879	−0.733	−0.427	−1.803**	−0.318
	(0.350)	(0.483)	(0.619)	(0.035)	(0.795)
BODSIZE	−0.005	0.053	−0.012	−0.059	0.057
	(0.995)	(0.483)	(0.844)	(0.382)	(0.571)
CEOCHAIR	−0.191	−0.073	0.162	0.088	0.390
	(0.588)	(0.849)	(0.584)	(0.790)	(0.346)
BLOCKHLD	−0.127	0.739	0.062	1.240	−0.344
	(0.899)	(0.455)	(0.938)	(0.158)	(0.740)
ROA	−1.686***	−1.174*	−1.308**	−1.103*	−0.465
	(0.007)	(0.058)	(0.022)	(0.100)	(0.530)
CAR	−2.526***	−2.178***	−1.567**	−1.208*	−0.388
	(0.003)	(0.008)	(0.040)	(0.095)	(0.682)
CROSSLIST	0.315	0.508	0.401	−0.087	0.323
	(0.431)	(0.284)	(0.262)	(0.819)	(0.498)
MKTCAP	0.072	−0.083	0.073	0.152	−0.524***
	(0.528)	(0.515)	(0.476)	(0.142)	(0.001)
INDUSTRY DUMMIES	Yes	Yes	Yes	Yes	Yes
Pseudo R^2	0.159	0.185	0.109	0.121	0.242
Observations	326	292	336	304	336
Panel B: Year (1,2)					
Intercept	−1.776	−0.773	−1.378	−3.367**	2.977
	(0.293)	(0.641)	(0.319)	(0.022)	(0.131)
RESTATE	0.732**	0.460*	0.224	0.668**	1.467***
	(0.015)	(0.100)	(0.361)	(0.015)	(0.000)
PUNRELDIR	−0.355	−0.077	−0.226	−0.586	0.115
	(0.687)	(0.934)	(0.769)	(0.470)	(0.914)
BODSIZE	−0.010	0.006	−0.007	−0.066	−0.011
	(0.875)	(0.928)	(0.886)	(0.260)	(0.894)
CEOCHAIR	−0.704**	−0.516	−0.337	−0.061	0.147
	(0.039)	(0.129)	(0.192)	(0.823)	(0.657)
BLOCKHLD	−0.800	−0.171	−0.419	0.299	0.001
	(0.375)	(0.831)	(0.536)	(0.695)	(0.999)
ROA	−1.745***	−1.782***	−1.589***	−0.868	−1.375**
	(0.004)	(0.007)	(0.006)	(0.198)	(0.035)
CAR	−2.283***	−1.752**	−1.488**	−1.078	−0.749
	(0.009)	(0.024)	(0.041)	(0.130)	(0.367)
CROSSLIST	−0.017	0.002	0.234	0.385	0.025
	(0.964)	(0.996)	(0.464)	(0.227)	(0.951)
MKTCAP	0.033	−0.004	0.046	0.144	−0.330**
	(0.729)	(0.966)	(0.584)	(0.109)	(0.011)
INDUSTRY DUMMIES	Yes	Yes	Yes	Yes	Yes
Pseudo R^2	0.140	0.097	0.064	0.083	0.213
Observations	326	292	336	304	336

CFO turnover within the first one but not two years after the restatement announcements), and is only (negatively) related to the CEO being the Board Chair for CEO turnover within the first two (not one) years after the restatement announcements. A negative and significant relation exists between both the return on assets (ROA) and the cumulative abnormal return (CAR) with CEO, President and top 3 turnovers for both post-restatement periods, with CFO turnover for the first-year post restatement only, and

for auditor turnover for only the first two years post restatement for only ROA. All turnovers are not significantly related to whether or not the firms are cross-listed or to their market capitalizations except for auditor turnovers being more likely for firms with lower market capitalizations.

5.3. Univariate analysis for turnover changes after SOX

Hennes et al. (2008), Collins et al. (2009), Burks (2010), Wang and Chou (2011) examine whether the likelihood of management turnover changes after the passage of the Sarbanes–Oxley Act of 2002 (SOX). They argue that if SOX changes the governance environment by enhancing the accountability of management for financial reports, then disciplinary actions against management following restatements should be more severe in the post-SOX period. Since our sample covers 1997 to 2006, it provides a natural experimental setting to test the indirect impact of SOX on management turnover. Panel A of Table 7 provides descriptive statistics for restating firms in the pre- and post-SOX periods. The pre-SOX period is January 1, 1997 to July 30, 2002, and the post-SOX period is August 1, 2002 to December 31, 2006. The size of a restatement announcement is measured as the cumulative impact of the restatement(s) on net income, scaled by total assets in the fiscal year prior to the restatement announcement. CAR is the cumulative abnormal return over the restatement event window [−5, 5]. The mean size of the restatements is −0.066 in the pre-SOX period and −0.013 in the post-SOX period. However, the differences-in-means based on unequal variances are not statistically significant. The mean CAR is −0.12 in the pre-SOX period and −0.05 in the post-SOX period. The post-SOX restatements have marginally significant less negative abnormal returns. This is consistent with Hennes et al. (2008), Collins et al. (2009) and Burks (2010) that the incidence of relatively benign restatements appear to have increased in the post-SOX period.

Table 7
Descriptive statistics for restating firms and control firms by SOX period. This table reports descriptive statistics for restating firms in the period before and after the Sarbanes–Oxley Act (SOX). The Pre-Sox period is 1997 to July 30, 2002 and the post-SOX period is July 30, 2002 to 2006. Size of the restatement is the cumulative impact of the restatement on net income scaled by total assets in the year prior to the restatement announcement. CAR is the cumulative abnormal return over days [−5, 5] around restatement announcements. The p-value for difference-in-means t-stats in Panel A is calculated assuming unequal variances ***, ** and * indicate significance at 0.01, 0.05 and 0.10 levels, respectively. Number of observations is 48 pre-SOX and 129 Post-SOX.

Panel A: descriptive statistics for restating firms by SOX period				
	Pre-SOX Mean	Post-SOX Mean	Difference	p-Value
Size of Restatement	−0.066	−0.013	−0.053	0.138
CAR	−0.120	−0.052	−0.069[*]	0.100

Panel B: turnover rates by SOX period					
	Restate	Control	t-Test p-value	Wilcoxon test p-value	Sample size
CEO turnover					
Pre-SOX	0.429	0.143	0.003[***]	0.008[***]	42
Post-SOX	0.306	0.165	0.010[***]	0.010[***]	121
President turnover					
Pre-SOX	0.564	0.308	0.040[**]	0.038[**]	39
Post-SOX	0.308	0.215	0.114	0.115	107
Board Chair turnover					
Pre-SOX	0.275	0.050	0.005[***]	0.012[**]	40
Post-SOX	0.194	0.176	0.733	0.737	108
Top three executives (CEO, President, Board Chair) turnover					
Pre-SOX	0.605	0.302	0.008[***]	0.007[***]	43
Post-SOX	0.376	0.336	0.494	0.497	125
CFO turnover					
Pre-SOX	0.567	0.243	0.009[***]	0.007[***]	37
Post-SOX	0.387	0.250	0.023[**]	0.022[**]	116
Unrelated directors turnover					
Pre-SOX	0.837	0.605	0.024[**]	0.041[**]	43
Post-SOX	0.584	0.616	0.477	0.481	125
External Auditor turnover					
Pre-SOX	0.302	0.023	0.000[***]	0.001[***]	43
Post-SOX	0.248	0.096	0.002[***]	0.001[***]	125
Audit Committee turnover					
Pre-SOX	0.651	0.674	0.822	1.000	43
Post-SOX	0.632	0.624	0.893	0.894	125

Panel B of Table 7 reports the differences in turnover rates between the pre- and post-SOX period. Turnover is equal to one if the management, directors, or auditors leave or are terminated by twenty-four months after the restatement announcements. CEO, CFO and external turnover rates for restating firms are significantly higher than for control firms in both the pre- and post-SOX period. In contrast, President, Board Chair, top executives and unrelated directors have significantly higher turnover rates for restating firms than for control firms in the pre-SOX period, but not in the post-SOX period. The differences in audit committee turnover between restating and control firms are not significantly different for both the pre- and post-SOX periods.

5.4. Multiple turnover regressions controlling for the impact of SOX

We conduct a multiple regression to examine the impact of the Sarbanes-Oxley Act of 2002 on turnover using the following logistic regression:

$$\begin{aligned} \text{TURNOVER} = {} & \beta_0 + \beta_1 \text{RESTATE} + \beta_2 \text{POSTSOX} + \beta_3 \text{RESTATE} * \text{POSTSOX} + \beta_4 \text{PUNRELDIR} \\ & + \beta_5 \text{BODSIZE} + \beta_6 \text{CEOCHAIR} + \beta_7 \text{BLOCKHLD} + \beta_8 \text{ROA} + \beta_9 \text{CAR} + \beta_{10} \text{CROSSLIST} \\ & + \beta_{11} \text{MKTCAP} + \beta_i \text{INDUTRY DUMMIES} + \varepsilon \end{aligned} \tag{3}$$

where TURNOVER is a dummy variable that is equal to one if the person who holds the position (CEO, President, Chair or CFO) leaves the firm within twenty-four months following the restatement announcement. RESTATE is a dummy variable that is equal to one if the firm is a restating firm and zero otherwise. POSTSOX is a dummy variable that is equal to one if the restatement is announced in the post-SOX period, and zero otherwise. The interaction term RESTATE * POSTSOX allows us to examine whether the sensitivity of turnovers to restatement announcements has changed in the post-SOX period. If the passage of SOX has increased the accountability of executives, the positive relation between turnover and restatements should be strengthened in the post-SOX period. We hypothesize a positive coefficient for β_3. The other control variables are as defined in Section 5.2.

The regression results are reported in Table 8. Consistent with the univariate results, the coefficient estimates of RESTATE are positive and significant ($\beta_1 > 0$) for all the turnovers (except for President turnover with a *p*-value = 0.24). Consistent with Arthaud-Day et al. (2006), Agrawal and Cooper (2007) and Collins et al. (2009), restatement announcements are significantly related to the turnover of executives in the pre-SOX period even after controlling for other determinants of turnover. In the post-SOX period, summing the estimated coefficients of RESTATE and RESTATE * POSTSOX ($\beta_1 + \beta_3$) gives the estimates of 0.650, 0.393, 0.006, and 0.487 for turnovers of CEO, President, top executives and CFO, respectively. Consistent with the univariate results, the sums are significantly different from zero for CEO (*p*-value = 0.05) and CFO (*p*-value = 0.02), but not for President (*p*-value = 0.22) and top executives (*p*-value = 0.98). The results indicate that CEO and CFO turnovers are significantly related to restatement announcements in the post-SOX period. Estimating the marginal effects of restatements on the probability of turnover suggests that restatements increase the likelihood of CEO (CFO) turnover by about 15% (25%) in the pre-SOX and 10% (10%) in the post-SOX period after controlling for other determinants of turnover. None of the estimated coefficients of POSTSOX (β_2) are significant, suggesting that the likelihood of executive turnover does not change after SOX. To determine whether the sensitivity of turnover to restatement announcements has changed in the post-SOX period, we examine the estimated coefficients of RESTATE * POSTSOX (β_3). None of the coefficients are significant. Contrary to our hypothesis, the passage of SOX does not increase the likelihood of CEO, President, top executives and CFO turnover to restatements. This result is consistent with the findings of Collins et al. (2009) and Burks (2007). In addition, management turnover is not significantly related to the proportion of unrelated directors (PUNRELDIR), board size (BODSIZE), outside blockholder ownership (BLOCKHLD), market capitalization (MKTCAP) or being cross-listed (CROSSLIST). When the CEO is also the Board Chair, the likelihood of CEO turnover is lower. As expected, the return on assets (ROA) is significantly and negatively related to CEO, President and top executive turnovers but not to CFO turnover.

Burks (2007) argues that one reason for not finding an increase in the sensitivity of turnover to restatement announcements in the post-SOX period is the decrease in the severity of restatements after SOX. Similarly, Collins et al. (2009) argue that the impact of the Sarbanes–Oxley Act on CFO turnover may depend on the severity of a restatement. The two measures used as the proxies for the severity of restatements are the size of the restatement (RESTATESIZE)[20] and the cumulative abnormal return (CAR) over the event window [−5, 5]. Given that there is no evidence of increased sensitivity of CEO, President, top executives, and CFO turnovers to restatements after SOX and the severity of restatements measured by CAR has (marginally) decreased after SOX, we run the following logistic regression to examine the impact of the severity of the restatements on the executive turnover related to restatement announcements controlling for other determinants of turnover as in Eq. (3):

$$\begin{aligned} \text{TURNOVER} = {} & \beta_0 + \beta_1 \text{POSTSOX} + \beta_2 \text{RESTATESIZE or CAR} + \beta_3 \text{RESTATESIZE} * \text{POSTSOX or CAR} * \text{POSTSOX} \\ & + \beta_4 \text{PUNRELDIR} + \beta_5 \text{BODSIZE} + \beta_6 \text{CEOCHAIR} + \beta_7 \text{BLOCKHLD} + \beta_8 \text{ROA} + \beta_9 \text{CROSSLIST} + \beta_{10} \text{MKTCAP} \\ & + \beta_i \text{INDUTRY DUMMIES} + \varepsilon. \end{aligned} \tag{4}$$

The coefficients of POSTSOX measure whether the sensitivity of turnover to restatements changes in the post-SOX period, controlling for restatement severity and other determinants of turnover. The coefficients of the interaction terms, RESTATESIZE * POSTSOX and CAR * POSTSOX, measure whether the sensitivity of turnover to restatement severity changes in the post-SOX period. We hypothesize a

---

[20] The results are similar if the size of the restatement is measured as the cumulative effect of restatement on net income scaled by total sales in the year end prior to the restatement announcement. However, using this measure results in the loss of observations since 27 firms out of 354 firms have zero sales.

Table 8
Logistic regressions for management turnover considering the effects of SOX.

This table reports the results for the following logistic regression:

$$TURNOVER = \beta_0 + \beta_1 RESTATE + \beta_2 POSTSOX + \beta_3 RESTATE * POSTSOX + \beta_4 PUNRELDIR + \beta_5 BODSIZE$$
$$+ \beta_6 CEOCHAIR + \beta_7 BLOCKHLD + \beta_8 ROA + \beta_9 CAR + \beta_{10} CROSSLIST + \beta_{11} MKTCAP + \beta_i INDUTRY\ DUMMIES + \varepsilon.$$

TURNOVER is a dummy variable that is equal to one if the person who holds the position (CEO, President, Chair or CFO) leaves the firm within twenty-four months following the restatement announcements. RESTATE is a dummy variable that is equal to one if the firm is a restating firm and zero otherwise. POSTSOX is a dummy variable that is equal to one if the restatement is announced in the post-SOX period, and zero otherwise. PUNRELDIR is the proportion of directors who are unrelated. BODSIZE is the number of directors on the board. CEOCHAIR is a dummy variable that is equal to one if the CEO is also the board chair and zero otherwise. BLOCKHLD is the percentage of voting rights held by outside blockholders with at least 10% of the voting rights attached to any class of voting securities who are unaffiliated with management. ROA is return on assets in the year prior to restatement announcements. CAR is the cumulative abnormal return over days [−5, 5] around restatement announcements. CROSSLIST is a dummy variable that is equal to one if the firm is cross-listed on a U.S. trade venue and zero otherwise. MKTCAP is the market capitalization in the year end before the restatement announcement. INDUSTRY DUMMIES are equal to one if the firm belongs to one of the six industries (Mining, Manufacturing, Transportation, Wholesale trade, Retail trade, and Finance) and zero otherwise. ***, ** and * indicate significance at 0.01, 0.05 and 0.10 levels, respectively.

Independent variable	CEO turnover (N = 326)	President turnover (N = 292)	Top 3 turnover (N = 336)	CFO turnover (N = 304)
Intercept	−1.775	−0.266	−1.353	−3.334**
	(0.336)	(0.869)	(0.332)	(0.030)
RESTATE	0.966*	0.700	0.894*	1.235**
	(0.095)	(0.244)	(0.066)	(0.041)
POSTSOX	0.073	−0.622	0.110	0.158
	(0.892)	(0.158)	(0.785)	(0.733)
RESTATE*POSTSOX	−0.316	−0.307	−0.888	−0.748
	(0.643)	(0.645)	(0.131)	(0.272)
PUNRELDIR	−0.384	0.066	−0.303	−0.653
	(0.659)	(0.942)	(0.693)	(0.435)
BODSIZE	−0.012	−0.008	−0.013	−0.073
	(0.860)	(0.901)	(0.804)	(0.224)
CEOCHAIR	−0.711**	−0.574	−0.352	−0.065
	(0.040)	(0.105)	(0.180)	(0.818)
BLOCKHLD	−0.779	−0.242	−0.377	0.342
	(0.383)	(0.756)	(0.573)	(0.650)
ROA	−1.701***	−1.703**	−1.474**	−0.773
	(0.006)	(0.018)	(0.019)	(0.281)
CAR	−2.218**	−1.582*	−1.313*	−0.946
	(0.011)	(0.052)	(0.085)	(0.196)
CROSSLIST	0.000	0.002	0.273	0.422
	(0.999)	(0.995)	(0.395)	(0.193)
MKTCAP	0.032	−0.008	0.044	0.140
	(0.742)	(0.937)	(0.594)	(0.124)
INDUSTRY DUMMIES	Yes	Yes	Yes	Yes
Pseudo R^2	0.142	0.120	0.075	0.090

positive (negative) coefficient for their respective estimated coefficients, implying that larger restatement magnitude and more negative abnormal returns increase the likelihood of executive turnover.

The logistic regression results are reported in Table 9. Similar to Table 8, the estimated coefficients are insignificant for the following controls: unrelated directors, board size, blockholder ownership, market capitalization and cross-listing. CEOCHAIR is negatively related to CEO and President turnover and top 3 turnover using RESTATESIZE only. ROA is negatively related to turnover with the exception of CFO turnover. In contrast to our hypothesis, the estimated coefficients for RESTATESIZE are insignificant, suggesting that the size of the restatements does not increase the likelihood of executive turnover in the pre-SOX period. The estimated coefficients of CAR are marginally significant for CFO and CEO turnover (p-values = 0.08 and 0.10, respectively). This indicates that more negative abnormal returns are only associated with a higher likelihood of CEO and CFO turnover in the pre-SOX period, but not for President and top executives turnovers. Consistent with Burks (2007) and Collins et al. (2009), the estimated coefficients of POSTSOX are insignificant for the turnovers of CEO, top executives and CFO, indicating that the sensitivity of turnover to restatements in the post-SOX period does not increase even after controlling for the decrease in the severity of restatements. However, the estimated coefficient of POSTSOX is negative and significant for President turnover, which suggests that the decline in the severity of restatements contributes to a decline in President turnover in restating firms after SOX. None of the estimated coefficients of RESTATE * POSTSOX and CAR * POSTSOX are significant, which implies that the sensitivity of turnover to restatement severity does not change in the post-SOX period.

One possible explanation for our results is that the restating firms in our sample consist of many small firms who cannot afford to adopt SOX or SOX-like governance practices because the huge costs of doing so may exceed the benefits to their investors. Unlike Anand et al. (2012), our sample firms are relatively smaller as they are not confined to those firms included in the S&P/TSX Composite Index. Our results are also consistent with the argument of Nicholls (2006) and Ben-Ishai (2008) that the more flexible

Table 9
Logistic regression for management turnover considering the effects of SOX and severity of restatements.

This table reports the results for the following logistic regression:

$$TURNOVER = \beta_0 + \beta_1 POSTSOX + \beta_2 RESTATESIZE \text{ or } CAR + \beta_3 RESTATESIZE * POSTSOX \text{ or} CAR * POSTSOX$$
$$+ \beta_4 PUNRELDIR + \beta_5 BODSIZE + \beta_6 CEOCHAIR + \beta_7 BLOCKHLD + \beta_8 ROA + \beta_9 CROSSLIST + \beta_{10} MKTCAP + \beta_i INDUTRY\ DUMMIES + \varepsilon.$$

RESTATESIZE is the cumulative impact of the restatement on net income scaled by total assets in the year prior to the restatement announcement. CAR is the cumulative abnormal return over days [−5, 5] around restatement announcements. POSTSOX is a dummy variable that is equal to one if the restatement is announced in the post-SOX period, and zero otherwise. PUNRELDIR is the proportion of directors who are unrelated. BODSIZE is the number of directors on the board. CEOCHAIR is a dummy variable that is equal to one if the CEO is also the board chair and zero otherwise. BLOCKHLD is the percentage of voting rights held by outside blockholders with at least 10% of the voting rights attached to any class of voting securities who are unaffiliated with management. ROA is return on assets in the year prior to restatement announcements. CAR is the cumulative abnormal return over days [−5, 5] around restatement announcements. CROSSLIST is a dummy variable that is equal to one if the firm is cross-listed on a U.S. trade venue and zero otherwise. MKTCAP is the market capitalization in the year end before the restatement announcement. INDUSTRY DUMMIES are equal to one if the firm belongs to one of the six industries (Mining, Manufacturing, Transportation, Wholesale trade, Retail trade, and Finance) and zero otherwise. ***, ** and * indicate significance at 0.01, 0.05 and 0.10 levels, respectively.

	CEO turnover		President turnover		Top 3 turnover		CFO turnover	
Intercept	−1.311	−1.119	0.326	0.145	−0.994	−1.013	−2.669*	−2.710*
	(0.431)	(0.518)	(0.837)	(0.925)	(0.477)	(0.455)	(0.078)	(0.065)
POSTSOX	−0.301	−0.108	−0.817***	−0.819***	−0.389	−0.370	−0.306	−0.213
	(0.369)	(0.767)	(0.005)	(0.005)	(0.158)	(0.170)	(0.260)	(0.437)
RESTATESIZE	1.928		−1.801		−1.012		−2.278	
	(0.671)		(0.183)		(0.327)		(0.379)	
RESTATESIZE *POSTSOX	−11.712		−8.993		−5.501		−9.444	
	(0.182)		(0.197)		(0.293)		(0.170)	
CAR		−2.760*		−1.325		−1.239		−1.518*
		(0.097)		(0.257)		(0.266)		(0.084)
CAR *POSTSOX		0.229		−0.991		−0.581		0.267
		(0.908)		(0.425)		(0.694)		(0.838)
PUNRELDIR	−0.578	−0.527	−0.072	0.011	−0.266	−0.202	−0.879	−0.773
	(0.488)	(0.529)	(0.938)	(0.990)	(0.729)	(0.791)	(0.287)	(0.348)
BODSIZE	−0.028	−0.016	−0.009	−0.009	−0.018	−0.016	−0.075	−0.076
	(0.664)	(0.805)	(0.892)	(0.893)	(0.722)	(0.764)	(0.201)	(0.202)
CEOCHAIR	−0.796**	−0.744**	−0.718**	−0.590*	−0.449*	−0.365	−0.216	−0.125
	(0.018)	(0.025)	(0.045)	(0.091)	(0.081)	(0.159)	(0.429)	(0.651)
BLOCKHLD	−0.886	−0.936	−0.372	−0.326	−0.483	−0.472	0.161	0.167
	(0.320)	(0.318)	(0.635)	(0.676)	(0.477)	(0.484)	(0.832)	(0.830)
ROA	−1.810***	−1.795***	−1.705**	−1.737**	−1.553**	−1.566***	−0.676	−0.881
	(0.005)	(0.002)	(0.022)	(0.011)	(0.013)	(0.009)	(0.335)	(0.166)
CROSSLIST	0.080	0.132	0.027	0.070	0.247	0.274	0.488	0.514*
	(0.820)	(0.712)	(0.943)	(0.855)	(0.431)	(0.386)	(0.112)	(0.099)
MKTCAP	0.066	0.030	−0.008	−0.009	0.057	0.048	0.156*	0.146*
	(0.475)	(0.747)	(0.931)	(0.922)	(0.507)	(0.564)	(0.088)	(0.100)
INDUSTRY DUMMIES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R^2	0.089	0.119	0.099	0.111	0.058	0.066	0.069	0.066
Observations	326	326	292	292	336	336	304	304

principles-based approach may be more appropriate than a traditional U.S. style rules-based approach for Canada because of the prevalence of small firms in Canadian capital markets.

6. Changes in governance following financial restatements

Farber (2005) finds that firms who manipulate their financial statements and are detected subsequently take actions to improve their governance. Although such firms have worse governance compared to control firms prior to fraud detection, they have similar proportions of outside directors and proportions with combined Board Chair and CEO positions to the control firms three years after fraud detection. Similarly, Desai et al. (2006) document an increase in the proportion of outside directors and blockholder ownership following restatements.

We now examine whether governance characteristics change post-restatement for our sample of restatement announcements. The post-announcement governance variables are obtained from the second proxy statement issued after the announcements. Table 10 reports the univariate analysis of changes in governance for 145 pairs of sample and control firms. Both board size and audit committee size change insignificantly (increase and decrease) for sample firms and control firms following the restatements, respectively. The numbers of unrelated directors and unrelated audit committee members increase significantly for sample firms and insignificantly for control firms. The proportion of unrelated directors increases significantly from 67% to 70% for both sample and control firms in the post-announcement period. The mean blockholder ownership also increases significantly from 11% to 13% for sample firms, and insignificantly for control firms. The percent of the firms whose CEO is also the Board Chair decreases insignificantly

Table 10

Governance variables for sample and control firms before and after the restatements. This table reports different governance variables before and two years after the restatement announcements. The sample size is 145 pairs of restating and control firms. The variables before and after the restatement are taken from proxy statements dated before the announcements and second proxy statement issued after the announcements, respectively. The variables are defined in Sections 4.3 and 5.2 of the paper. Within sample *p*-values are for tests of the differences in sample (control) firms before and after the announcements. Sample vs. control difference *p*-values are for tests of the difference between sample and control firms after the restatement announcements.

	Restating firm			Control firm			Sample vs. control difference *p*-value
	Before	After	Within sample *p*-value	Before	After	Within sample *p*-value	
Board size	7.97	8.13	0.17	7.97	7.84	0.30	0.17
Unrelated directors	5.46	5.72	0.04	5.43	5.56	0.24	0.48
Proportion of unrelated directors	0.67	0.70	0.01	0.67	0.70	0.01	0.91
Audit committee size	3.28	3.36	0.17	3.32	3.28	0.30	0.28
Unrelated audit committee members	3.02	3.21	0.01	3.08	3.13	0.32	0.34
Proportion of unrelated audit committee	0.91	0.96	0.02	0.91	0.95	0.00	0.87
Blockholder ownership	0.11	0.13	0.01	0.14	0.14	0.47	0.19
CEO = CHAIR	0.33	0.28	0.13	0.41	0.34	0.02	0.33

from 33% to 28% for the restatement sample, and decreases significantly from 41% to 34% for control firms, respectively. Based on the last column of Table 10, there are no significant differences between sample and control firms following the restatement announcements. In summary, the results suggest that restating firms experience increases in both the number and the proportion of unrelated directors and unrelated audit committee members, and in blockholder ownership in the post-restatement period. This indicates that consistent with Farber (2005) and Desai et al. (2006), restating firms try to improve their governance after the restatement announcements.

7. Conclusion

This study compares the evolution in the governance and termination practices of Canadian firms who announced financial restatements during the 1997–2006 period with a matched control sample of firms that did not restate. We find that restatement likelihood is independent of whether the CEO is the Board Chair or is a founding-family member but is more likely when a firm is exhibiting higher growth, is subject to greater agency problems (lower blockholder or management ownership), is subject to less independent internal oversight (lower proportion of unrelated directors or no financially savvy directors on the audit committee) and is audited by a less prestigious independent auditing firm (not a Big 5 auditor).

Compared to the control firms post-restatement, the turnovers of the Board Chair, unrelated directors and audit committee members of restating firms are not significantly different, and the turnovers of their Presidents, CEOs, CFOs and external auditors are significantly higher. This indicates that restating firms use the turnover of pre-restatement management and external auditors as signals that they are dealing with internal agency problems.

Although the passage of the Sarbanes–Oxley Act of 2002 primarily had an indirect effect on the regulatory oversight and governance practices of our sample firms, the Canadian regulatory system for corporate governance uses a more flexible approach based on principles- versus the U.S. style rules-based approach to reflect the differences in the composition and characteristics of Canadian versus U.S. firms. Nevertheless, as has been reported for U.S. firms, we find that SOX had no significant effect on terminations of management and corporate overseers post-restatement (the exception is for restatements associated with more negative market impacts). This supports the notion that the routes for regulatory oversight of corporate governance can differ for firms in countries with different roots and still have the same impact on some aspects of corporate behavior.

We find a convergence towards control-group governance by restating firms post-restatement by increasing the number and proportion of unrelated directors and audit committee members. This finding that Canadian restating firms try to improve their governance and restore their reputations after restatement announcements is similar to that found in the U.S. While this does not address the first negative signal of a financial restatement that deals with the firm's future earnings prospects, it attempts to deal with the second signal that deals with the quality of the firm's management team, financial oversight and information and control systems.

References

Abbott, L.J., Park, Y., Parker, S., 2000. The effects of audit committee activity and independence on corporate fraud. Manag. Financ. 26, 55–67.

Abbott, L.J., Parker, S., Peters, G.F., 2004. Audit committee characteristics and restatement. Audit. J. Pract. Theory 23, 69–87.

Aggarwal, R., Erel, I., Stulz, R., Williamson, R., 2009. Differences in governance practices between U.S. and foreign firms: measurement, causes, and consequences. Rev. Financ. Stud. 22 (8), 3131–3169.

Agrawal, A., Chadha, S., 2005. Corporate governance and accounting scandals. J. Law Econ. 48, 371–406.

Agrawal, A., Cooper, T., 2007. Corporate governance consequences of accounting scandals: evidence from top management, CFO and auditor turnover. Working paper.University of Alabama.

Agrawal, A., Jaffe, J.F., Karpoff, J.M., 1999. Management turnover and governance changes following the revelation of fraud. J. Law Econ. 42, 23–56.

Anand, A.I., Milne, F., Purda, L.D., 2012. Domestic and international influences on firm-level governance: evidence from Canada. Am. Law Econ. Rev. 14 (1), 68–110 (Spring).

Anderson, K., Yohn, T., 2002. The effect of 10-K restatements on firm value, information asymmetries, and investors' reliance on earnings. Working paper.Georgetown University.

Arthaud-Day, M.L., Certo, S.T., Dalton, C.M., 2006. A changing of the guard: executive and director turnover following corporate financial restatements. Acad. Manage. J. 49, 1119–1136.

Beasley, M.S., 1996. An empirical analysis of the relation between the board of director composition and financial statement fraud. Account. Rev. 71, 443–465.

Bedard, J., Chtourou, S.M., Courteau, L., 2004. The effect of audit committee expertise, independence, and activity on aggressive earnings management. Audit. J. Pract. Theory 23, 15–37.

Beneish, M.D., 1999. Incentives and penalties related to earnings overstatements that violate GAAP. Account. Rev. 74, 425–457.

Ben-Ishai, S., 2008. Sarbanes–Oxley five years later: a Canadian perspective. Loyola Univ. Chicago Law J. 39, 469–491.

Burks, J.J., 2007. Sarbanes–Oxley and the effect of restatements on CEO and CFO compensation and turnover. Working paper.University of Iowa.

Burks, J.J., 2010. Disciplinary measures in response to restatements after Sarbanes–Oxley. J. Account. Public Policy 29, 195–225.

Carcello, J.V., Nagy, A.L., 2004. Audit firm tenure and fraudulent financial reporting. Audit. J. Pract. Theory 23, 55–69.

Collins, D., Masli, A., Reitenga, A., Sanchez, J.M., 2009. Earnings restatements, the Sarbanes–Oxley Act and the disciplining of chief financial officers. J. Account. Audit. Finance 24, 1–34.

Dechow, P.M., Sloan, R.G., Sweeney, A.P., 1996. Causes and consequences of earnings manipulation: an analysis of firms subject to enforcement actions by the SEC. Contemp. Account. Res. 13, 1–36.

Desai, H., Hogan, C.E., Wilkins, M.S., 2006. The reputational penalty for aggressive accounting: earnings restatements and management turnover. Account. Rev. 81, 83–112.

Farber, D.B., 2005. Restoring trust after fraud: does corporate governance matter? Account. Rev. 80, 539–561.

Gadhoum, Y., 2006. Power of ultimate controlling owners: a survey of Canadian landscape. J. Manage. Governance 10, 179–204.

Gadhoum, Y., Lang, L.H.P., Young, L., 2005. Who controls us? Eur. Financ. Manag. 11, 339–363.

Hennes, K.M., Leone, A.J., Miller, B.P., 2008. The importance of distinguishing errors from irregularities in restatement research: the case of restatements and CEO/CFO turnover. Account. Rev. 83, 1487–1519.

Hribar, P., Jenkins, N.T., 2004. The effect of accounting restatements on earnings revisions and the estimated cost of capital. Rev. Account. Stud. 9, 337–356.

Hyndman, D.M., 2003. Chair, British Colombia Securities Commission, submission to the Standing Senate Committee on Banking, Trade and Commerce. What Kind of Securities Regulation for Canada?, 5, pp. 1–5 (May 23, transcript available at http://http://www.bcsc.bc.ca/speech.asp?id=1728).

Jensen, M.C., 1993. The modern industrial revolution, exit and the failure of internal control systems. J. Financ. 48, 831–880.

Jensen, M.C., Meckling, W.H., 1976. Theory of firm: managerial behavior, agency costs and ownership structure. J. Financ. Econ. 3, 305–360.

King, M.R., Santor, E., 2008. Family values: ownership structure, performance and capital structure of Canadian firms. J. Bank. Financ. 32, 2423–2432.

Kinney Jr., W.R., Palmrose, Z.-V., Scholz, S., 2004. Auditor independence, non-audit services, and restatements: was the U.S. government right? J. Account. Res. 42, 561–588.

Klein, A., 2002. Audit committee, board of director characteristics, and earnings management. J. Account. Econ. 33, 375–400.

Loebbecke, J.K., Eining, M.M., Willingham, J.J., 1989. Auditors' experience with material irregularities: Frequency, nature, and delectability. Audit. J. Pract. Theory 9, 1–28.

Nicholls, C., 2006. The characteristic of Canada's capital markets and the illustrative case of Canada's legislative regulatory response to Sarbanes–Oxley. Research study commissioned by the Task Force to modernize securities legislation in Canada, pp. 129–203.

Palmrose, Z.-V., 1988. An analysis of auditor litigation and audit service quality. Account. Rev. 63, 55–73.

Palmrose, Z.-V., Richardson, V.J., Scholz, S., 2004. Determinants of market reactions to restatement announcements. J. Account. Econ. 37, 59–90.

Persons, O.S., 2006. The effects of fraud and lawsuit revelation on U.S. executive turnover and compensation. J. Bus. Ethics 64, 405–419.

Raghunandan, K., Read, W.J., Whisenant, J.S., 2003. Initial evidence on the association between nonaudit fees and restated financial statements. Account. Horiz. 17, 223–234.

Richardson, S., Tuna, I., Wu, M., 2002. Predicting earnings management: the case of earnings restatements. Working paper.University of Pennsylvania.

Scholz, S., 2008. The Changing Nature and Consequences of Public Company Financial Restatements, 1997–2006. Department of the Treasury (April).

Shleifer, A., Vishny, R.W., 1986. Large shareholders and corporate control. J. Polit. Econ. 95, 461–488.

Srinivasan, S., 2005. Consequences of financial reporting failures for outside directors: evidence from accounting restatements and audit committee members. J. Account. Res. 43, 291–334.

Toronto Stock Exchange (TSX) Committee on Corporate Governance in Canada, 1994. Where were the directors? Guidelines for improved corporate governance in Canada (Toronto, December).

Wang, Y., Chou, L.L., 2011. Impact of restatement characteristics and subsequent earnings management on post-SOX executive turnover. Rev. Bus. 31, 24–50.

Warner, J., Watts, R.L., Wruck, K.H., 1988. Stock prices and top management changes. J. Financ. Econ. 20, 461–492.

Yermack, D., 1996. Higher market valuation of companies with a small board of directors. J. Financ. Econ. 40, 185–211.

Young, C.-S., Tsai, L.-C., Hsu, H.-W., 2008. The effect of controlling shareholders' excess board seats control on financial restatements: evidence from Taiwan. Rev. Quant. Finan. Acc. 30 (3), 297–314.