

Board composition and earnings management in Canada

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Abstract

This study contributes to the literature on the role of the board by investigating the effect of board composition on the practice of earnings management in Canada. We find that earnings are managed upward to avoid reporting losses and earnings declines. While outside directors, as a whole, do not reduce abnormal accruals, directors from financial intermediaries reduce earnings management, and the board representation of active institutional shareholders reduces it further. We do not find that monitoring of abnormal accruals by outside directors, as a whole, or by directors from financial institutions is more effective after the issuance of the Toronto Stock Exchange's Corporate Governance Guidelines of 1994. Finally, we do not find that earnings management decreases with the average tenure of outside directors as board members of the firm, either. Our findings suggest that adding outside directors to the board may not achieve improvement in governance practices by itself, especially in jurisdictions where ownership is highly concentrated and the outside directors' labor market may not be well developed.

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1. Introduction

Boards have the fiduciary responsibility to monitor the management to protect shareholders' interest. However, there is a widely held concern about the board's inability to

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ensure that the management acts in the interest of shareholders. Boards of publicly traded firms are generally viewed as relatively passive entities, often dominated by the managers whom they are charged with monitoring. Since earnings management misleads investors by giving them false information about a firm's true operating performance, boards may have a role in constraining the practice of earnings management.²

In an effort to enhance the effectiveness of the board, a recent trend is to require that the board be constituted with a majority of outside directors. Policy directives adopted in many jurisdictions—including the [Cadbury Committee Report in England \(1992\)](#), the [Toronto Stock Exchange Corporate Governance Guidelines in Canada \(1994\)](#), and the [Blue Ribbon Committee Report and Recommendations in U.S. \(1999\)](#)—presume that outside directors can make a positive contribution to the board's monitoring responsibilities. Yet, there are those who doubt that the mere participation of a greater number of outside directors will cause the board to better represent the interest of shareholders. Research on the benefits, if any, associated with the increasing participation of outside directors is still limited. This paper contributes to the existing literature on the role of the board by investigating how the board composition affects the board's ability to protect shareholders' interest reflected in the level of accrual management in Canada.

The Canadian capital markets present a unique case in the study of the corporate board. Similar to the United States (US) and the United Kingdom (UK), Canada is a country where public equity markets are well developed. At the same time, however, there is an important difference that distinguishes the Canadian equity market from those of the US and the UK. In the UK and the US, ownership in publicly traded firms is highly dispersed, while in Canada, ownership is highly concentrated. A large number of publicly traded firms in Canada are controlled by a large blockholder, or an affiliated group of investors.

In firms with a concentrated owner, there is a real danger that dominant shareholders may mistreat or expropriate outside shareholders. Canadian lawmakers have dealt with the concentrated ownership in public equity markets by providing minority shareholders with various legal recourses to protect their interests from the dominant shareholders (see [Cheffins, 1999](#) for a review). Thus, Canadian boards operate in a unique jurisdiction where public equity markets are highly developed but ownership is highly concentrated, and where there is a strong protection of minority shareholders.

Study of the Canadian boards can be of general interest because high ownership concentration is a norm rather than an exception around the world. However, the protection of outside shareholders has been questionable in many countries. In order to attract global risk capital, many jurisdictions are likely to move to a stronger protection of outside shareholders. [Cheffins \(1999\)](#) observes that the Canadian response to the problem of abuse by dominant shareholders may prove instructive to the policy-makers of other jurisdictions because Canada maintains a market system to which many jurisdictions are likely to evolve. As a way to partly fulfill the general interest in the operation of the board

² The recent collapse of Enron and a string of auditing scandals in which major financial irregularities are found ex post facto at companies such as Waste Management, Rite Aid, Sunbeam, and Xerox provide good examples that earnings management can cause a significant wealth loss for shareholders (see [Paltrow, 2002](#)).

in the presence of ownership concentration and comprehensive minority protection, we examine the relation between outside directors and the level of accrual management in Canada. Despite the general belief that outside directors improve the monitoring of managers, we find that outside directors, as a whole, do not reduce earnings management in Canada.

In search of a reason why outside directors do not help the board reduce earnings management, we investigate whether directors who are officers of financial intermediaries, in particular, improve the monitoring of abnormal accruals activity. Since directors who are officers of financial intermediaries, unlike ordinary outside directors, are sophisticated financially, they may help the board reduce earnings management. Consistent with our expectation, we find that the directors from financial intermediaries reduce earnings management. In addition, we examine whether the board representation of large pension funds reduces earnings management further. Large pension funds, especially those funds that do not have business with industrial firms, would have a greater influence on the reduction of the earnings management, not only because they are independent, but also because earnings management may affect the long-run performance of pension funds negatively. We find some evidence that the representatives from large pension funds on the board further reduce earnings management.

We also investigate the effect of the Toronto Stock Exchange Corporate Governance Guidelines of 1994 (the Guideline or TSE Guideline hereafter) on the board composition and the board monitoring activity. The Guideline is of special interest, not only because it recommends that firms have a majority of outsiders on the board, but also because it may have increased the profile, as well as the investors' awareness, of the role of the board in corporate governance in Canada. We find that the Guideline minimally affects the composition of the board. Furthermore, the effect of outside directors and directors from financial intermediaries on the earnings management is not significantly different between periods before and after the publication of the Guideline.

Finally, in order to shed further light on why outside directors, as a whole, do not help the board reduce earnings management in our Canadian sample, we investigate whether outside directors who have served as board members of the firm for longer periods are able to monitor earnings management activity more effectively than unseasoned ones. The experience on the company board may provide outside directors with better understanding of the firm and its people. While monitoring competencies of outside directors are likely to increase with their tenure with the company board, we find no evidence that the average tenure of outside directors improves the effectiveness of the monitoring of earnings management activity.

The remainder of the paper is organized as follows. Section 2 discusses the relevant literature and develops research questions. Section 3 describes the method used to measure abnormal accruals. Section 4 describes the data. Section 5 shows the univariate analysis of abnormal accruals around earnings targets in relation to the board composition. Employing regression analysis, Section 6 investigates the effect of outside directors, directors who are officers of financial intermediaries, and representatives of the three largest pension funds in Canada on the abnormal accruals. Section 7 examines the relation between board composition and abnormal accruals with respect to the Toronto Stock Exchange's adoption of Corporate Governance Guidelines in 1994. Section 8 discusses the role of experience of

outside directors with the firm as reflected in their tenure as board members of the firm. Section 9 concludes the paper.

2. Literature review and hypotheses development

There is a widely held belief that publicly traded firms manipulate reported earnings (see, for example, Ronen and Sadan, 1981; O'Glove, 1987; Kellog and Kellog, 1994). A large body of empirical research has documented the existence of earnings manipulation, in particular, around corporate events where an agency problem is expected to be acute (see Healy and Whalen, 1998 for a review).

Earnings manipulations range from earnings frauds, which violate Generally Accepted Accounting Principles (GAAP), to earnings management, which does not. Even in the absence of fraudulent reporting, firms can manipulate reported accounting earnings because GAAP allows alternative representations of accounting events. According to Teoh et al. (1998), the sources of earnings manipulations within GAAP include the choice of accounting methods, the application of accounting methods, and the timing of asset acquisitions and dispositions. Management can alter reported earnings by choosing an accounting method that advances (delays) the recognition of revenues and delays (advances) the recognition of expenses in order to increase (decrease) reported earnings. Once an accounting method is chosen, management can alter reported earnings further by using a wide range of discretionary aspects of the application of the chosen accounting method. Finally, management can alter reported earnings by adjusting the timing of asset acquisitions and dispositions.

Clearly, earnings management increases information asymmetry between insiders and outsiders, and it has the potential to decrease shareholders' wealth. Teoh et al. (1998) report that initial public offering (IPO) issuers who manage earnings aggressively substantially underperform those who manage earnings conservatively, showing how outside shareholders can be harmed by the practice of earnings management. When the interests of managers and shareholders diverge, it is more likely that earnings are manipulated by managers and become less informative for the shareholders. Consistent with this argument, Fan and Wong (2000) document that earnings are less informative, measured by the earnings–return relation, as the controlling owner's voting rights diverge from the cash flow rights.³

The role of outside directors in the protection of shareholders has long been a subject of much debate and research. Fama and Jensen (1983) observe that outside directors compete in the outside directors' labor market and have incentives to develop reputations as experts in monitoring management because the value of their human capital depends primarily on their performance as monitors of top management of other organizations. However, the empirical evidence on the monitoring effectiveness that outside directors provide is somewhat mixed.

³ Fan and Wong (2000) use firm-specific information on pyramid structures, cross-holdings, and deviations from one-share–one-vote rules of seven Asian countries to measure the separation of voting rights and cash flow rights.

While several authors find that independent outside directors protect shareholders in specific instances where there is an agency problem (Weisbach, 1988; Byrd and Hickman, 1992), others find no or negative relationship between outside directors and shareholder welfare (Agrawal and Knoeber, 1996; Klein, 1998). In particular, Agrawal and Knoeber (1996) document that outsiders on the board affect firm performance negatively even after accounting for the interdependence among various corporate control mechanisms.

Competition in the outside directors' labor market, as discussed by Fama and Jensen (1983), suggests that outside directors may have an incentive to monitor earnings management. Consistent with this view, Dechow et al. (1996) and Beasley (1996) provide US evidence that outside board members are effective in constraining earnings frauds. Interestingly, Peasnell et al. (2000) report that outside directors became effective in UK in constraining earnings management only after the issuance of the Cadbury Committee Report.

On the other hand, there are those who point out that outside directors may become effective monitors only if they have proper incentives. Monks and Minow (1995, pp. 223–224) argue that directors become effective, not just because they have no economic ties to the company beyond their job as directors, but because they are significant shareholders. They note that disinterested outsiders can mean uninterested outsiders. Consistent with this view, outside directors are likely to be uninterested directors in jurisdictions such as Canada, where they have only token ownership interest, if any, in the firms they serve. The perspective of Monks and Minow (1995) suggests that the increasing board representation of outside directors does not, ipso facto, lead to an increasing reduction of earnings management in Canada.

Outside directors in Canada operate in a different environment than those in the US and UK. Many Canadian CEOs are the founders and controlling shareholders of the firms they manage, unlike in other financially developed countries where most public companies are widely held by individual investors (Daniels and Halpern, 1996). The ability of outside directors to monitor the management is likely to be limited, especially with regard to constraining earnings management. Seen in this light, our investigation deals more specifically with whether outside directors play a significant role in reducing earnings management even in the presence of large blockholders, who may or may not manage the firm directly.

While all outside directors may have the intention to curb earnings management, only those with financial expertise may be able to do so. Using the US board data from 1996, Chtourou et al. (2001) report that the board's ability to successfully curb earnings management is a function of the attributes of outside directors. Other studies also indicate that the value of outside directors may come from their expertise. Rosenstein and Wyatt (1990) document a positive stock price reaction to the appointment of outside directors even when outside directors already constitute a majority, suggesting that outside directors provide expertise beyond monitoring service. Consistent with the hypothesis that directors provide expertise, Booth and Deli (1999) find that the use of bank debt has a positive relation with the likelihood that commercial bankers sit on the board, suggesting that commercial bankers supply expertise on the bank debt markets.

The foregoing studies suggest that officers of financial institutions may be selected to provide their financial expertise to the board. We examine whether directors from financial

intermediaries reduce abnormal accruals more than other types of outside directors. Since officers of financial intermediaries are sophisticated financially, we expect that they are particularly helpful to the board in reducing earnings management.

Moreover, the board representation of activist institutional shareholders may further reduce earnings management. The shareholder activism of large institutions has become increasingly visible in recent years and heralded as a promising governance mechanism, which contrasts with the more drastic takeover model. A number of academic studies have assessed the role of institutional shareholder activism. However, evidence on the effect of institutional shareholder activism is inconclusive. Some studies document a positive wealth effect for shareholders while others show no welfare improvement. For example, [Smith \(1996\)](#) reports that shareholder wealth increases when firms adopt proposed changes by the California Public Employees Retirement System (CalPERS). On the other hand, [Karpoff et al. \(1996\)](#) report a small but insignificant wealth effect around proposals initiated by activist shareholders. Similarly, [Wahal \(1996\)](#) reports that for most of the firms, he examines that no wealth effect is associated with proxy proposals from large US pension funds.

Large pension funds have become increasingly active in Canada.⁴ There are at least four reasons for the activism of large pension funds in Canada. In 1999, the Caisse de Dépôt et Placement du Québec (CDPQ), the Ontario Teachers' Pension Plan Board (Teachers'), and the Ontario Municipal Employee Retirement System (OMERS)—the three largest pension funds in Canada—managed assets of Can\$105, Can\$68, and Can\$35 billion, respectively.⁵ With these kinds of resources, large pension funds are able to influence the management of firms in which they invest. Furthermore, it is problematic for a large Canadian pension fund to simply keep selling underperforming holdings because of a limited number of investment candidates in the Canadian capital market.⁶ In addition, large pension funds may find it pragmatic to work with the management because selling large chunks of a firm may drive down the stock price. Finally, in contrast to the other financial intermediaries, large pension funds do not have a significant business relationship with industrial firms, so their monitoring service might be more independent and effective than that of other types of independent directors.

Using a sample of UK firms, [Peasnell et al. \(2000\)](#) investigate the effect of the [Cadbury Committee Report \(1992\)](#), which is a series of recommendations on corporate governance, on the relationship between earnings management and board composition. While they find no evidence of association between the degree of accrual management and the board composition during the pre-Cadbury period, they report a significant negative relation between income-increasing accruals and the proportion of outside board members during

⁴ Refer to the Canadian Business Current Affairs database for a survey of incidents of shareholder activism by the three largest Canadian pension funds.

⁵ In comparison, the big six banks of Canada managed assets of Can\$277, Can\$263, Can\$227, Can\$226, Can\$215, and Can\$72 billion, respectively, in the same year. Morgan Stanley MSCI Country Statistics reports an equity capitalization of Can\$783 billion (US\$502 billion) in 1999 for Canada.

⁶ The Government of Canada imposes a foreign content restriction on pension assets indirectly through Revenue Canada. Foreign content is tax-exempt only up to 20% of total pension assets. That is, foreign content in excess of 20% is taxed. In 1999, the foreign content of all trusted pension funds was 11% (Quarterly Estimates of Trusted Pension Funds, Statistics Canada, March 2000). More recently, Revenue Canada raised the tax exemption limit to 25%.

the post-Cadbury period. Their result suggests that properly structured boards discharged their financial reporting duties more effectively, as reflected in a reduction in earnings management after the release of the Cadbury Committee Report, which brought about an increased emphasis on board monitoring and nonexecutive directors. We investigate the extent to which the TSE Guideline affects the composition of the board and whether the outside directors, in particular officers of financial institutions and those of the big three pension funds, protect shareholders' interest better by reducing accruals activity more effectively after the adoption of the Guideline.

3. Measurement of abnormal accruals

While there is no perfect way to measure earnings management, a widely accepted proxy is the unexplained current accruals given the change in sales. We use this quantity, called discretionary current accruals, to measure abnormal accruals. We follow the standard methodology to measure discretionary current accruals, which is the cross-sectional version of the Jones model (Jones, 1991; Dechow et al., 1995; Teoh et al., 1998). In order to estimate nondiscretionary current accruals, we regress current accruals on the change in sales. Specifically, we estimate the parameters of the following modified Jones model, a cross-sectional ordinary least squares (OLS) regression model:

$$\frac{CA_{i,t}}{TA_{i,t-1}} = \omega_0 \frac{1}{TA_{i,t-1}} + \omega_1 \frac{\Delta SALES_{i,t}}{TA_{i,t-1}} + \varepsilon_{i,t}, \quad (1)$$

where $CA_{i,t}$ is current accruals for firm i in year t , measured as the change in noncash current assets minus the change in nondebt current liabilities; $\Delta SALES_{i,t}$ is the change in sales for firm i in year t ; and $TA_{i,t-1}$ is the book value of total assets for firm i from the prior year. The regression equation is deflated by lagged total assets in order to reduce heteroskedasticity. The estimation of regression coefficients is carried out for each industry-year using all nonsample Canadian firms found in the Research Insight database and the Global Vantage database. The industry classification is based on the Toronto Stock Exchange subindices. Industry-years with fewer than six observations are excluded from the analysis.

Following Dechow et al. (1995), we estimate each sample firm's nondiscretionary current accruals (NDCA) as follows:

$$NDCA_{i,t} = \hat{\omega}_0 \frac{1}{TA_{i,t-1}} + \hat{\omega}_1 \frac{(\Delta SALES_{i,t} - \Delta TR_{i,t})}{TA_{i,t-1}}, \quad (2)$$

where $\hat{\omega}_0$ and $\hat{\omega}_1$ are OLS estimates for the regression parameters in Eq. (1) and $\Delta TR_{i,t}$ is the change in trade receivables.

Finally, we obtain abnormal accruals (AA) as the remaining portion of the current accruals:

$$AA_{i,t} = \frac{CA_{i,t}}{TA_{i,t-1}} - NDCA_{i,t}. \quad (3)$$

4. Data

The sample period extends from 1991 to 1997. Board data, ownership data, and executive compensation data are collected from proxy documents returned by Canadian firms found in the Global Vantage database. The final sample has a total of 539 firm-years. The sample firm-year is selected only when detailed information on directors, ownership, and executive compensation is available from the proxy document; detailed financial information of the firm is reported in the Global Vantage database and detailed market information of the firm is reported in the Toronto Stock Exchange Western database. Financial firms are excluded from the sample because they use different accrual procedures.

Table 1 shows characteristics of the sample firms. Panel A shows the distribution of the frequency of firm observations. There are 202 unique firms and 539 firm-years in the sample. Only eight firms remain in the sample for all 7 years, accounting for 56 of 539 firm-years. The remaining 483 firm-years are from firms that are added after 1991, or from firms that are in the sample in 1991 and drop out due to various reasons.⁷ While 70 firms occur only once during the sample period, 132 firms are observed more than once.⁸ Panel B presents the board composition by types of directors and by years. Outside directors have been defined in a number of ways in the literature (e.g., [Rosenstein and Wyatt, 1990](#); [Peasnell et al., 2000](#)). In this paper, company officers, family members of the controlling shareholder, and related company officers are considered inside directors. According to this definition, inside directors represent about 32% of the board. The other types of directors are considered outside directors. Outside board members include unrelated company officers, officers of financial institutions, former bankers, lawyers, academics, consultants, corporate directors, and former politicians.⁹ Among them, unrelated company officers represent about 46% of the total outside directors. Officers of financial institutions represent about 9% of the outside board members. However, as shown in Table 4, about 43% of firms have at least one officer of financial institutions on the board, while 2.4% of firms have at least one representative of the big three pension funds.

Panel C of Table 1 shows the number of firm-years where the big three pension funds control 10% or more of voting rights. In the total sample of 539 firm-years, there are 517 major shareholders where major shareholders are defined as those who have 10% or more of voting rights. Of those 517 major shareholders, 397 major shareholders are the largest major shareholders; 94, the second largest major share-

⁷ Most firms in the sample have incomplete time series because of short-listing history, nonavailability of proxy and/or financial data, mergers, bankruptcies, etc.

⁸ In order to deal with the presence of repeated firm observations, we control for firm fixed effects in pooled regression analyses. Furthermore, we remove 70 firms, which appear only once for the sample period, in the regression analyses reported in Tables 5, 6, 9, and 10 because firm fixed effects cannot be meaningfully measured for these firms.

⁹ Officers of financial institutions include officers of the big three pension funds. A director is classified as a corporate director if his/her main occupation is to serve as a corporate director of one or more firms (as per the proxy), and an unrelated company officer if his/her main occupation is to serve as a senior officer of an unrelated firm.

Table 1
Sample characteristics

Panel A: Frequency distribution of firm observations

Number of years a firm appears in the sample	Number of firms	Firm-years
1	70	70
2	40	80
3	39	117
4	20	80
5	14	70
6	11	66
7	8	56
Total	202	539

Panel B: Board composition by types of directors and by years

	1991	1992	1993	1994	1995	1996	1997	Total	%
Company officers	72	118	143	200	201	214	330	1278	23.4
Relatives of controlling shareholders	4	6	2	4	7	4	9	36	0.7
Related company officers	29	50	57	78	55	66	88	423	7.8
Unrelated company officers	64	142	178	365	255	284	427	1715	31.5
Officers of financial institutions	11	22	36	46	47	65	92	319	5.9
Former bankers	1	4	7	15	17	8	12	64	1.2
Lawyers	22	40	53	94	69	79	104	461	8.5
Academics	5	11	10	17	13	15	23	94	1.7
Consultants	11	28	39	57	56	60	81	332	6.1
Corporate directors	12	31	47	62	67	60	87	366	6.7
Former politicians	5	6	10	13	15	9	16	74	1.4
Others	14	24	29	42	42	58	80	289	5.3
Total	250	482	611	993	844	922	1349	5451	100
Firm observations	21	42	56	93	86	96	145	539	

Panel C: Number of firm-years where big three pension funds control 10% or more of voting rights

	MS1 ^a	MS2	MS3	Total
Total of the sample	397	94	26	517
Caisse de Dépôt et Placement du Québec	3	4	7	14
Ontario Teachers' Pension Plan Board	2	3	0	5
Ontario Municipal Employees Retirement System	6	6	0	12

Panel D: Number of board representation of the big three pension funds

	MS1 ^a	MS2	MS3	Total
Caisse de Dépôt et Placement du Québec	1	2	7	10
Ontario Teachers' Pension Plan Board	1	2	0	3
Ontario Municipal Employees Retirement System	0	0	0	0

The sample period is 1991–1997. The sample consists of 539 firm-year observations for which board data, ownership data, and executive compensation data are available from proxy documents returned by Canadian firms found in the Global Vantage database.

^a MS1 is the largest major shareholder and MS n is the n th largest major shareholder.

holders; and 26, the third largest major shareholders. That is, there are 397 firm-years with at least one major shareholder, 94 firm-years with at least two major shareholders, and 26 firm-years with at least three major shareholders. The above descriptive statistics on ownership structure imply that ownership is highly concentrated to a few investors in Canadian firms.

Among 397 observations of the largest major shareholders, CDPQ is the largest major shareholder in three firm-years, Teachers' in two firm-years, and OMERS in six firm-years, respectively. Consistent with the well-known fact that a large proportion of Canadian firms is closely held by founding families or foreign multinationals, we find that the big three pension funds are major shareholders only in 31 firm-years out of 517 observations of major shareholders. Panel D shows the number of board representation of the big three pension funds. It is interesting to note that there are only 13 firm-years where the big three pension funds dispatch their representative to the board out of 31 firm-years where they are major shareholders.

5. Abnormal accruals around earnings targets

Burgstahler and Dichev (1998) suggest that managers will seek to avoid reporting losses and earnings declines. Following Burgstahler and Dichev (1998), Degeorge et al. (1999), and Peasnell et al. (2000), we use two earnings targets: zero earnings (Target1) and last fiscal year's earnings (Target2).¹⁰ Firms are hypothesized to practice earnings management to meet these two targets. Unmanaged earnings (UME) are estimated by subtracting the abnormal accruals (AA) from the reported earnings. Panel A of Table 2 shows abnormal accruals around earnings targets. Of 539 firm-years, 296 firm-years undershoot the first earnings target and 243 firm-years overshoot the first target, while 355 firm-years undershoot the second target and 184 firm-years overshoot the second target. We find that, when unmanaged earnings are below the target earnings, positive abnormal accruals are taken to increase the reported earnings, and when unmanaged earnings are on or above the targets, negative abnormal accruals are taken to decrease the reported earnings.¹¹

¹⁰ It is possible that the earnings are not an ideal measure to establish earnings targets because they may increase/decrease as a result of merger. In order to remove this spurious effect, we also used earnings per share (EPS). We first estimated unmodified earnings of all firms using the standard method. Then, we inferred unmodified EPS from unmodified earnings by multiplying the scaled unmodified earnings by previous year's assets, then dividing it by the number of shares outstanding. We used these unmodified EPS to determine whether a firm missed its earnings targets. We also reestimated the unmodified earnings by using the current year's assets as the scaling factor in order to remove the merger effect on earnings. Finally, we constructed a sample where we removed firms for which the asset increased or decreased by more than 30% of the beginning year asset as a filter for firms that underwent sizable mergers or divestitures. Even though not reported in tables, these measures give qualitatively the same results as unmodified earnings calculated using the standard methodology reported in the paper. We thank the reviewer for pointing this out.

¹¹ In order to avoid the nonindependence problem of the same firm observations, we conducted the same analysis using observations in year 1993 for the pre-Guideline period and observations in year 1997 for the post-Guideline period. We obtained qualitatively identical results.

Table 2
Mean abnormal accruals

Panel A: Abnormal accruals as a function of earnings targets

UME < Target1	UME ≥ Target1	UME < Target2	UME ≥ Target2
0.244 (22.44)*** N = 296	− 0.068 (− 7.13)*** N = 243	0.211 (21.26)*** N = 355	− 0.105 (− 9.32)*** N = 184

Panel B: Abnormal accruals as a function of earnings targets and board independence

DOUT	UME < Target1	UME ≥ Target1	UME < Target2	UME ≥ Target2
0	0.237 [36]	− 0.108 [28]	0.213 [42]	− 0.156 [22]
1	0.245 [260]	− 0.006 [215]	0.211 [313]	− 0.098 [162]
Difference	0.008 (0.24)	0.102 (1.21)	− 0.002 (− 0.08)	0.058 (1.40)

Panel C: Abnormal accruals as a function of earnings targets and board representation of financial institutions

FI	UME < Target1	UME ≥ Target1	UME < Target2	UME ≥ Target2
0	0.256 [201]	− 0.055 [116]	0.230 [231]	− 0.093 [86]
1	0.218 [95]	− 0.081 [127]	0.176 [124]	− 0.115 [98]
Difference	− 0.038 (− 1.71)*	− 0.026 (− 1.33)	− 0.054 (− 2.74)***	− 0.022 (− 0.97)

The sample period is 1991–1997. Abnormal accrual is estimated as the difference between the actual current accruals and the nondiscretionary current accruals estimated using the modified Jones model. UME is the unmanaged earnings scaled by lagged assets. The relative position of UME is with respect to zero earnings (Target1) and last year's earnings (Target2). Unmanaged earnings are computed by subtracting abnormal accruals from reported earnings. The null hypothesis for Panel A is that abnormal accruals are zero. The null hypothesis for Panel B is that there is no difference in abnormal accruals whether the board has a majority of outside directors or not. DOUT takes a value of one if the board has a majority of outside directors and zero if otherwise. The null hypothesis for Panel C is that there is no difference in abnormal accruals whether there is a board representation of financial institutions or not. FI takes a value of one if there is a director from financial institutions on the board and zero if otherwise. Numbers in square brackets are the number of observations, and numbers in parentheses are *t* statistics. We assume that observations are independent for the calculation of *t* statistics, but we do not assume equal variances.

* Indicates level of significance at 10%. The test of significance is two-tailed.

*** Indicates level of significance at 1%. The test of significance is two-tailed.

We examine whether abnormal accruals are smaller for firms in which the majority of board members are outsiders (50% or more directors are outsiders) than for firms with more insiders on the board. Further, we examine whether firms with directors from financial institutions exhibit different levels of abnormal accruals than firms without directors from financial institutions. Panel B of Table 2 shows that abnormal accruals are not significantly different between firms with more inside directors and firms with more outside directors. However, the univariate analysis in Panel C shows that income-increasing accruals are statistically smaller for firms with directors from financial institutions. For example, when we look at the case where unmanaged earnings are negative (UME < Target1), abnormal accruals are 25.6% of lagged assets for firms without directors from financial institutions (for FI = 0), while they are 21.8% for firms with directors from financial institutions (for FI = 1), and the difference is statistically significant. The differences in abnormal accruals between firms with and without directors from financial institutions are also statistically significant for the case where unmanaged earnings are below last year's earnings (UME < Target2).

6. Regression analysis of abnormal accruals activity

In Section 5, we used univariate analysis to examine the relation between abnormal accruals and board characteristics. In this section, we examine the effect of the board composition on abnormal accrual activities by using regression models. We use the cross-sectional pooled regression method to see whether the board independence reduces earnings management. The dependent variable is the abnormal accrual scaled by the previous year's total assets. The regression model is as follows:

$$\begin{aligned} AA = & \alpha_0 + \beta_1 OUT + \beta_2 BLOCK + \beta_3 LEV + \beta_4 LSALES + \beta_5 MBRATIO \\ & + \beta_6 BONUS + \beta_7 IND + \beta_8 YEAR + \beta_9 FIRM + \varepsilon, \end{aligned} \quad (4)$$

where AA stands for abnormal accruals; OUT is the proportion of outside directors; BLOCK is the presence of a controlling shareholder; LEV is financial leverage; BONUS is the weight of bonus in the executive pay; IND is a vector of industry dummies; YEAR is a vector of year dummies; and FIRM is a vector of firm dummies.

The proportion of outside directors to the total number of directors (OUT) is used as a proxy for board independence. The board may want to reduce income-increasing accruals because it overstates the performance of the firm and increases probability of breakdown in the future. We expect the sign of coefficients for OUT to be negative because outside directors would attempt to reduce income-increasing accruals when firms undershoot target earnings. However, when firms overshoot target earnings and management takes negative discretionary accruals, it is not evident whether boards would correct income-decreasing accruals. Income-decreasing accruals understate the current performance, but they are likely to improve financial health in the future. Thus, the board is less likely to object to income-decreasing accruals. However, if the objective of the board is to minimize the earnings management to improve the informativeness of earnings and the accountability of the firm's performance, the objective of the independent and informed board may be to reduce negative abnormal accruals when firms overshoot the targets. Thus, the expected sign of coefficients for OUT is ambiguous when firms overshoot target earnings.

The proxies for ownership concentration (BLOCK), financial leverage (LEV), size (LSALES), growth opportunities (MBRATIO), and the weight of bonus (BONUS) are added to the regression model as control variables. Ownership concentration (BLOCK) is measured as the fraction of votes attached to all voting shares controlled by the largest blockholder of the firm. Studies show an inverse relationship between accounting or market firm performance and the probability of management turnover (Warner et al., 1988). This implies that executives of widely held firms need to be concerned about reported earnings, while controlling shareholders, who are completely protected from dismissal, need not. For this reason, executives of widely held firms have greater incentives than controlling shareholders of closely held firms to manipulate reported earnings. Consistent with this argument, Klassen (1997) reports evidence that closely held firms are less concerned about reporting low earnings than are widely held firms.

On the other hand, controlling shareholders also have incentives for earnings manipulation. Individual controlling shareholders have a strong incentive to channel wealth from

the publicly traded firms they control to firms they own privately, while corporate controlling shareholders have an incentive to channel wealth from controlled firms to the ultimately controlling firm. This would lead individual and corporate controlling shareholders to manipulate earnings in order to avoid being caught while appropriating money from the publicly traded firms under their control. Thus, the overall effect of ownership concentration on earnings management is indeterminate.

Financial constraints are proxied by financial leverage (LEV), which is obtained as the ratio of total interest-bearing debt to total assets. Firms that face financial constraints or distress have an incentive to adjust earnings upward in order to avoid a potential loss from disclosing a financial problem. Truthful revelation of financial states by firms in short-term financial difficulty may lead to debt–covenant violation and an increase in financing cost, as well as the loss of key employees. DeAngelo et al. (1994) and DeFond and Jambalvo (1994) report evidence of abnormal accruals when firms face binding debt covenants. A debt–covenant violation argument would predict a positive relationship between abnormal accruals and financial leverage. However, highly indebted firms may be less able to practice earnings management because they are under close scrutiny of lenders. In particular, lenders may intensify the monitoring of earnings management for firms that are likely to miss earnings targets. If the lender monitoring effect prevails, then earnings management will decrease with financial leverage. We also estimate the models using the Altman Z score and times-interest-earned (TIE) as alternative measures of financial constraints.¹²

We also control for a firm's growth opportunities as a potential determinant of abnormal accruals. Firms with high growth opportunities may need to “overinvest” intentionally in current assets in anticipation of future sales growth. This practice of temporary overinvestment in current assets can lead to a positive relationship between growth opportunities and abnormal accruals. Furthermore, it is easier for fast-growing firms to engage in earnings management than slow-growing or stagnant firms because it is generally harder to see through the business activities of fast-growing firms. We expect a positive relation between a firm's growth opportunities and its abnormal accrual activity. The firm's growth opportunities (MBRATIO) are measured by the market-to-book ratio of assets.

Big firms are followed actively by the external capital markets. Thus, big firms are less likely to be able to hide abnormal accruals than small firms, which tend to be neglected by the analysts and the press. Therefore, we expect the firm size to have a negative relation with the firm's abnormal accruals. We use the logarithm of the net sales (LSALES) as a proxy for the firm size.

Some US studies report that bonus is a determinant of the earnings management activity. Management may have incentive to manipulate reported earnings to maximize their bonuses over time. For example, Healy (1985), Holthausen et al. (1995), and Gaver et al. (1995) document evidence consistent with the manipulation of reported earnings caused by bonus-maximizing incentives. The weight of bonus (BONUS) is computed as the

¹² Altman Z score is highly negatively correlated with debt ratio as expected. TIE is also significantly negatively correlated with debt ratio, but not as strongly as Altman Z score. We find qualitatively the same result using Altman Z score as when using debt ratios. However, TIE is a weak predictor of abnormal accruals, unlike debt ratio and Altman Z score.

average ratio of bonus to total pay for all executives whose compensation information is disclosed. The total pay is the sum of salary, bonus, present value of stock option grants, value of restricted share grants, long-term incentive payouts, other annual compensation, and all other compensation as per the proxy. The weight of the bonus is calculated by averaging over the five highest-paid executives. Averaging is expected to reduce the measurement error caused by lumpiness in option grants.

In Table 3, we present a summary of the definitions of variables used in the regression models. Table 4 reports the summary statistics of variables used in the OLS regressions. We find that both the mean and the median firms have a majority of outside directors. That is, the board is independent in more than half of the sample firm-years. A little less than half of the sample firms (43%) have a board representation of financial intermediaries. The Pearson correlation coefficients of key independent variables, which are not reported, show that the regression models are relatively free from multicollinearity problems.

Table 5 shows the OLS estimates of the regression models, which study the effect of the board composition on the abnormal accruals. A vector of industry dummies (IND), a vector of year dummies (YEAR), and a vector of firm dummies (FIRM) are added to control for industry-fixed effects, year-fixed effects, and firm-fixed effects, respectively; but their coefficients are not reported in the table. Panel A reports the result of the regression of abnormal accruals on the proportion of outside directors (OUT) and controls.

Table 3
Definitions of variables

Variables	Definition
Abnormal accruals (AA)	CA/TA—NDCA
Proportion of outside board members (OUT)	Ratio of number of outside directors to number of directors on board
Board independence (DOUT)	One if the board has a majority of outside directors, zero if otherwise
Representation of financial intermediaries on the board (FI)	One if there is a director from financial services industries on the board, zero if otherwise
Representation of active institutional shareholders (BIG3)	One if there is a director from pension funds, zero if otherwise
Ownership concentration (BLOCK)	Fraction of votes attached to all voting shares controlled by the largest block shareholder
Financial leverage (LEV)	Ratio of the sum of long-term debt and short-term debt to total assets
Firm size (LSALES)	Ln(sales)
Investment opportunities (MBRATIO)	Market-to-book ratio of assets
Weight of bonus (BONUS)	Average ratio of bonus to total pay for all executives

CA/TA is a scaled measure of current accruals. It is obtained by normalizing the current accruals (CA) by lagged total assets (TA), where current accruals is, in turn, obtained by subtracting change in nondebt current liabilities from change in noncash current assets. NDCA is the nondiscretionary current accruals obtained using the modified Jones model. Outside directors are those directors who are neither employees of the company, nor relatives of the controlling shareholder, nor officers of the controlling companies. Financial intermediaries are commercial banks, insurance companies, investment banks, finance companies, mutual funds, and pension funds. The big three pension funds (BIG3) are Caisse de Dépôt et Placement du Québec, Ontario Teachers' Pension Plan Board, and Ontario Municipal Employee Retirement System. Sales are net and in millions of dollars.

Table 4
Summary statistics of variables

Variables	Mean	Median	S.D.
AA	0.103	0.064	0.231
OUT	0.673	0.667	0.157
FI	0.430	0.000	0.496
BIG3	0.024	0.000	0.154
BLOCK	0.263	0.176	0.331
LEV	0.248	0.248	0.150
LSALES	6.078	6.186	1.637
MBRATIO	1.430	1.030	1.296
BONUS	0.154	0.136	0.130

Abnormal accruals (AA) are measured by subtracting the nondiscretionary accruals estimated using the cross-sectional Jones method from the actual accruals. OUT is the proportion of outside board members. FI is a dummy variable equal to one if there is a director from financial services industries on the board and zero if otherwise. BIG3 is a dummy variable equal to one if there is a director from pension funds and zero if otherwise. BLOCK is the fraction of votes attached to all voting shares controlled by the largest block shareholder. LEV is the ratio of the sum of long-term debt and short-term debt to total assets. LSALES is the natural log of sales. MBRATIO is the market-to-book ratio of assets. BONUS is the average ratio of bonus to total pay for all executives. The sample period is 1991–1997. The sample consists of 539 firm-year observations.

Regression I is for firm-year observations with unmanaged earnings below Target1 (zero earnings), and Regression II is for firm-year observations with unmanaged earnings above Target1. Regression III is for firm-year observations with unmanaged earnings below Target2 (last year's earnings), and Regression IV is for firm-year observations with unmanaged earnings above Target2. If outside directors reduce earnings management, we expect the sign of coefficient for OUT to be negative when firms undershoot target earnings. However, the expected sign of coefficient for OUT is ambiguous when firms overshoot target earnings. The regression results in Panel A document that the coefficient of outside directors (OUT) is not significant except for Regression IV where the coefficient is positive and significant. That is, the proportion of outside directors does not affect the level of earnings management when unmanaged earnings are below target earnings, but earnings management increases with the increasing participation of outside directors when unmanaged earnings are above last year's earnings. Since it is not clear whether outside directors decrease or increase earnings management of firms that overshoot target earnings, our discussion focuses on earnings management of firms that undershoot target earnings. In an unreported test, we use an outsider dummy that takes the value of one if the proportion of outside directors is more than 50% of the board and zero if otherwise, and we find qualitatively the same results.

The sign of size variable is consistent with the literature. The estimated coefficients of LSALES are negative and significant in Regressions I and III and positive and significant in Regressions II and IV, consistent with the notion that larger firms are more closely scrutinized than smaller firms. The estimated coefficients of LEV are negative and significant in Regressions I and III, indicating that lenders monitor earnings management closely when firms miss their earnings targets. The estimated coefficients of MBRATIO are positive in Regressions I–IV and significant in Regressions II and IV, consistent with the notion that fast-growing firms may “overinvest” temporarily in net working capital in

anticipation of sales growth and that it is more difficult to detect earnings management when firms are growing faster.

BLOCK is the fraction of votes attached to all voting shares controlled by the largest block shareholder only. Our results do not show that block ownership affects earnings management. As a robustness test, we use a dummy variable of BLOCK using 20%, 25%, and 30% cut-off points because it is well known that the effect of ownership on firm value is nonlinear (McConnell and Servaes, 1990). However, the dummy approach still does not lead to any new result. Similarly, we fail to document

Table 5
Ordinary least squares (OLS) regressions of abnormal accruals

Variables	I UME < Target1	II UME ≥ Target1	III UME < Target2	IV UME ≥ Target2
<i>Panel A: Effect of outside directors on the abnormal accruals</i>				
Constant	0.684 (5.73)***	−0.318 (−2.67)***	0.608 (5.71)***	−0.388 (−3.20)***
OUT	0.026 (0.32)	−0.019 (−0.28)	0.093 (1.47)	0.171 (2.16)**
BLOCK	0.035 (0.70)	0.038 (1.00)	0.060 (1.67)	0.072 (1.47)
LEV	−0.277 (−3.45)***	−0.028 (−0.25)	−0.311 (−4.54)***	−0.096 (−0.74)
LSALES	−0.031 (−4.24)***	0.013 (1.87)*	−0.027 (−4.37)***	0.014 (1.90)*
MBRATIO	0.011 (1.74)*	0.054 (3.57)***	0.011 (1.76)*	0.044 (1.96)**
BONUS	−0.063 (−0.88)	0.104 (1.47)	−0.122 (−1.55)	0.053 (0.57)
N	249	220	303	166
Adjusted R ²	0.430	0.202	0.462	0.266
<i>Panel B: Effect of outside directors and the presence of directors from financial intermediaries on the abnormal accruals</i>				
Constant	0.695 (5.88)***	−0.318 (−2.67)***	0.619 (5.92)***	−0.387 (−3.20)***
OUT	0.014 (0.18)	−0.003 (−0.05)	0.083 (1.35)	0.188 (2.45)***
FI	−0.059 (−2.69)***	−0.023 (−1.43)	−0.038 (−2.11)**	−0.023 (−1.27)
BLOCK	0.004 (0.08)	0.038 (1.00)	0.043 (1.19)	0.072 (1.47)
LEV	−0.254 (−3.10)***	−0.017 (−0.15)	−0.290 (−4.15)***	−0.093 (−0.72)
LSALES	−0.027 (−3.79)***	0.013 (1.96)**	−0.025 (−4.12)***	0.014 (2.01)**
MBRATIO	0.013 (1.72)*	0.058 (3.92)***	0.012 (1.76)*	0.049 (2.17)**
BONUS	−0.030 (−0.41)	0.108 (1.47)	−0.102 (−1.53)	0.054 (0.58)
N	249	220	303	166
Adjusted R ²	0.445	0.203	0.468	0.266
<i>Panel C: Effect of outside directors, the presence of directors from financial intermediaries, and the board representation of the big three pension funds on the abnormal accruals</i>				
Constant	0.693 (5.87)***	−0.316 (−2.64)***	0.619 (5.93)***	−0.387 (−3.20)***
OUT	0.017 (0.21)	−0.003 (−0.05)	0.083 (1.34)	0.191 (2.47)***
FI	−0.058 (−2.63)***	−0.023 (−1.43)	−0.038 (−2.10)**	−0.026 (−1.43)
BIG3	−0.075 (−2.12)**	0.007 (0.17)	−0.110 (−3.05)***	0.096 (1.76)
BLOCK	−0.002 (−0.04)	0.038 (1.00)	0.042 (1.18)	0.075 (1.54)
LEV	−0.261 (−3.14)***	−0.018 (−0.16)	−0.292 (−4.18)***	−0.098 (−0.75)
LSALES	−0.027 (−3.72)***	0.013 (1.94)*	−0.025 (−4.12)***	0.014 (1.88)**
MBRATIO	0.012 (1.65)*	0.058 (3.90)***	0.012 (1.74)*	0.048 (2.15)
BONUS	−0.028 (−0.39)	0.112 (1.49)	−0.103 (−1.55)	0.042 (0.46)
N	249	220	303	166
Adjusted R ²	0.444	0.199	0.467	0.267

any influence of bonus on earnings management, even when we use a number of different proxies.

In the next regression model, we include a dummy for officers of financial institutions who are board members to investigate whether directors from financial institutions affect earnings management:

$$\begin{aligned} AA = & \alpha_0 + \beta_1 OUT + \beta_2 FI + \beta_3 BLOCK + \beta_4 LEV + \beta_5 LSALES \\ & + \beta_6 MBRATIO + \beta_7 BONUS + \beta_8 IND + \beta_9 YEAR + \beta_{10} FIRM + \varepsilon. \end{aligned} \quad (5)$$

The presence of officers of financial intermediaries is measured as a binary variable FI, which takes the value of one if an officer from financial intermediaries is present on the firm's board and a value of zero if otherwise. Financial intermediaries include commercial banks, insurance companies, investment banks, finance companies, mutual funds, and pension funds. We expect the sign of coefficient for FI to be negative when firms undershoot target earnings. However, the expected sign of coefficient for FI is ambiguous when firms overshoot target earnings, as it is for OUT. Panel B reports the result of the regression of abnormal accruals on the proportion of outside directors (OUT), dummy for financial intermediaries' officers on the board (FI), and controls. Panel B of Table 5 shows that the presence of finance directors (FI) has an impact on the earnings management. We find that the coefficients of the board representation of financial intermediaries (FI) are negative and significant in Regressions I and III, while they are not significant in Regressions II and IV. This suggests that officers of financial intermediaries curb income-increasing earnings management (shown in Regressions I and III). As we argued above, officers of financial intermediaries may choose not to curb income-decreasing manipulation (shown in Regressions II and IV). While not reported, we also find that the presence of financial directors on the board reduces the time series means, as well as time series variances, of abnormal accruals when firms miss the earnings targets.

Notes to Table 5:

Regressions I and III are for firms with unmanaged earnings below zero earnings (Target1) and last year's earnings (Target2), respectively, while Regressions II and IV are for firms with unmanaged earnings above zero earnings and last year's earnings. Abnormal accruals are measured by subtracting the fitted accruals obtained using the cross-sectional Jones method from the actual accruals. OUT is the proportion of outside board members. FI is a dummy variable equal to one if there is a director from financial services industries on the board and zero if otherwise. BIG3 is a dummy variable equal to one if there is a director from pension funds and zero if otherwise. BLOCK is the fraction of votes attached to all voting shares controlled by the largest block shareholder. LEV is the ratio of the sum of long-term debt and short-term debt to total assets. LSALES is the natural log of sales. MBRATIO is the market-to-book ratio of assets. BONUS is the average ratio of bonus to total pay for all executives. The sample period is 1991–1997. In all regressions (I–IV), we control for the year, industry, and firm-fixed effects. However, coefficients on the dummy variables for years, industries, and firms are not reported. The *t* statistics are shown in parentheses.

*Indicates level of significance at 10%. The test of significance is two-tailed.

**Indicates level of significance at 5%. The test of significance is two-tailed.

***Indicates level of significance at 1%. The test of significance is two-tailed.

Panel C of Table 5 shows the results of OLS regression models where we add a dummy for the board representation of active institutional shareholders to examine its incremental effect on abnormal accruals. The regression model is as follows:

$$AA = \alpha_0 + \beta_1 OUT + \beta_2 FI + \beta_3 BIG3 + \beta_4 BLOCK + \beta_5 LEV + \beta_6 LSALES \\ + \beta_7 MBRATIO + \beta_8 BONUS + \beta_9 IND + \beta_{10} YEAR + \beta_{11} FIRM + \varepsilon. \quad (6)$$

The coefficient of the presence of directors from financial intermediaries (FI) is again significantly negative in Regressions I and III. In addition, the coefficient of the representation of active institutional shareholders (BIG3) is significant and negative in Regressions I and III. It suggests that the board representation of active institutional shareholders reduces abnormal accruals incrementally when firms undershoot their earnings targets.

Next, we combine both observations of overshooting and undershooting target earnings and examine whether board composition affects abnormal accruals when unmanaged earnings (UME) are below the target. In order to examine this, we use the following regression specification with interactive variables:

$$AA = \beta_0 + \beta_1 NEGDUM + \beta_2 (DOUT \times NEGDUM) + \beta_3 (FI \times NEGDUM) \\ + \beta_4 (BIG3 \times NEGDUM) + \beta_5 BLOCK + \beta_6 LEV + \beta_7 LSALES \\ + \beta_8 MBRATIO + \beta_9 BONUS + \beta_{10} IND + \beta_{11} YEAR + \beta_{12} FIRM + \varepsilon, \quad (7)$$

where DOUT takes a value of one if outside directors are the majority (50% or more) of the board and a value of zero if otherwise.¹³ NEGDUM1 (NEGDUM2) takes a value of one if unmanaged earnings (UME) are below Target1 (Target2) and a value of zero if otherwise. We introduce the interactive variables, $DOUT \times NEGDUM$, to investigate whether outside directors reduce income-increasing accruals when unmanaged earnings are below the target; $FI \times NEGDUM$ to investigate whether directors from financial institutions reduce income-increasing accruals when unmanaged earnings are below the target; and $BIG3 \times NEGDUM$ to investigate whether representatives of active institutional shareholders reduce income-increasing accruals when unmanaged earnings are below the target.

The benefit of this regression specification is that we can use full information in the regression analysis while we test for the effect of outside directors, officers of financial institutions, and representatives of active institutional shareholders on earnings management. Table 6 reports the result of the model estimation; Regression I is for Target1, and Regression II is for Target2. Table 6 confirms findings in Table 5. Even though we use full information by combining both observations of unmanaged earnings below and above targets, we still find that the officers of financial intermediaries and active institutional

¹³ In an unreported analysis, we use the proportion of outside directors (OUT) and obtain the qualitatively same result as is reported here. We report the result using the dummy variable for outside directors to demonstrate the robustness of the results.

Table 6
Ordinary least squares (OLS) regressions of abnormal accruals

Variables	I	II
Constant	0.092 (1.22)	0.123 (1.67)
NEGDUM1	0.293 (8.36)***	
NEGDUM2		0.280 (9.05)***
DOUT × NEGDUM1	− 0.006 (− 0.17)	
DOUT × NEGDUM2		0.005 (0.16)
FI × NEGDUM1	− 0.061 (− 2.89)***	
FI × NEGDUM2		− 0.051 (− 2.84)***
BIG3 × NEGDUM1	− 0.097 (− 2.51)**	
BIG3 × NEGDUM2		− 0.116 (− 3.69)***
BLOCK	0.026 (0.93)	0.032 (1.17)
LEV	− 0.256 (− 3.53)***	− 0.275 (− 3.90)***
LSALES	− 0.012 (− 1.99)**	− 0.014 (− 2.34)**
MBRATIO	0.026 (3.53)***	0.024 (3.44)***
BONUS	0.058 (1.10)	− 0.036 (− 0.65)
N	469	469
Adjusted R ²	0.571	0.559

Abnormal accruals are measured by subtracting the fitted accruals obtained using the cross-sectional Jones method from the actual accruals. NEGDUM1 takes the value of one when unmanaged earnings are below zero earnings (Target1), while NEGDUM2 takes the value of one when unmanaged earnings are below the previous year's reported earnings (Target2). Otherwise, both variables are zero. DOUT × NEGDUM1 (NEGDUM2) is an interaction between board independence and the dummy variable for missing Target1(2). DOUT takes a value of one if the board has a majority of outside directors and zero if otherwise. FI × NEGDUM1 (NEGDUM2) is an interaction between the presence of directors from financial intermediaries and the dummy variable for missing Target1(2). FI is a dummy variable equal to one if there is a director from financial services industries on the board and zero if otherwise. BIG3 × NEGDUM1 (NEGDUM2) is an interaction between the board representation of the big three pension funds and the dummy variable for missing Target1(2). BIG3 is a dummy variable equal to one if there is a director from pension funds and zero if otherwise. BLOCK is the fraction of votes attached to all voting shares controlled by the largest block shareholder. LEV is the ratio of the sum of long-term debt and short-term debt to total assets. LSALES is the natural log of sales. MBRATIO is the market-to-book ratio of assets. BONUS is the average ratio of bonus to total pay for all executives. In all models, we control for the year, industry, and firm-fixed effects. However, coefficients on the dummy variables for years, industries, and firms are not reported. The sample period is 1991–1997. The sample consists of 469 firm-year observations. The *t* statistics are shown in parentheses.

** Indicates level of significance at 5%. The test of significance is two-tailed.

*** Indicates level of significance at 1%. The test of significance is two-tailed.

shareholders on the board reduce income-increasing accruals when unmanaged earnings are below the target. However, we do not find any significant effect of independent board on the earnings management when we combine observations of both overtarget and undertarget earnings.

We also investigate whether the documented effect of board composition on the earnings management is robust with regard to the level of a firm's growth opportunities by partitioning the sample into high Tobin's *q* firms and low Tobin's *q* firms, then estimating the models presented in Table 5. The results of the model estimation for both subsamples, which are not reported here, are qualitatively identical to those in Table 5, suggesting that the effect of board composition on earnings management that we document in this study is independent of the level of a firm's growth opportunities.

7. The Toronto Stock Exchange Corporate Governance Guidelines of 1994

In Section 6, we observed that the presence of officers of financial intermediaries and the big three pension funds on the board reduces the firms' earnings management. In this section, we examine the effect of the Toronto Stock Exchange Corporate Governance Guidelines of 1994 on the board composition and earnings management.

The Toronto Stock Exchange Committee on Corporate Governance in Canada issued a series of guidelines to be used as a voluntary code of best practices of internal governance procedures, designed to improve the board's monitoring. The TSE Guideline recommends that the board of directors should be constituted with a majority of unrelated directors and an appropriate number of directors who do not have interests in, or relationships with, either the corporation or its significant shareholder, such that the shareholders other than the significant shareholder are fairly represented. We investigate whether the increased emphasis on the board's monitoring function by the TSE Guideline is associated with improved managerial accountability, as reflected in a reduction of the level of accrual manipulation.

Table 7 shows the change in the board composition, as well as other firm characteristics, surrounding the Toronto Stock Exchange's adoption of the Guideline. In Panel A, we choose observations in 1993 for the pre-Guideline period and observations in 1997 for the post-Guideline period for comparison. There are 56 firm observations in 1993 and 145 firm observations in 1997. We find that the proportion of independent directors increased by only 0.9% from 66.1% to 67.0% from the pre-Guideline period to the post-Guideline period. In contrast, block ownership (BLOCK) decreased by 6.4%. However, the weight of bonus increased from 12% in the pre-Guideline period to 17% in the post-Guideline period, which is consistent with the finding of Park et al. (2001) that the Ontario Securities Commission's executive compensation disclosure regulation of 1993 led the boards of Toronto Stock Exchange firms to increase executive bonuses after 1993.

Because Panel A of Table 7 includes firms that appear either in the pre- or post-Guideline period only, the observed change in the board composition may not be due to the Guideline, but instead due to the difference in firm composition of subperiods. In order to remove the effect of nonidentical firms on the comparison result between subperiods, we limit the sample to firms that exist at least once in both the pre- and the post-Guideline periods, thus obtaining a sample of 236 firm-years. Further, we take time series averages of 63 firms from 236 firm-year observations in order to conduct a paired difference test. We report the result in Panel B. The proportion of independent directors (OUT) changed from 63% to 70% and the difference is statistically significant. However, there is no significant change in the representation of financial intermediaries. It is interesting to note that the average proportion of outside directors is greater than 50% even before the Toronto Stock Exchange's adoption of the Guideline, although we do not perform any formal test of the fact. We also performed the same test with firms that appear in both years 1993 and 1995, and we find that the results are qualitatively the same with those reported in the paper.

Table 8 shows that the difference in abnormal accruals between the pre- and post-Guideline periods is not statistically significant whether firms undershoot or overshoot either Target1 or Target2. For the univariate analysis, we use observations in 1993 for the

Table 7

Comparison of variables between the pre- and post-Guideline periods

Panel A: Comparison of variables between the pre- and post-Guideline periods

Variables	Pre-Guideline mean (<i>N</i> = 56)	Post-Guideline mean (<i>N</i> = 145)	Difference
OUT	0.661	0.670	0.009 (0.34)
FI	0.411	0.455	0.044 (0.57)
BLOCK	0.312	0.248	−0.064 (−1.57)
LEV	0.259	0.247	−0.012 (−0.44)
LSALES	6.095	6.155	0.060 (0.26)
MBRATIO	1.181	1.524	0.343 (1.99)**
BONUS	0.121	0.173	0.052 (2.85)***

Panel B: Comparison of variables between the pre- and post-Guideline periods using firms that appear at least once in both periods

Variables	Pre-Guideline mean (<i>N</i> = 63)	Post-Guideline mean (<i>N</i> = 63)	Mean of paired differences
OUT	0.630	0.700	0.070 (3.35)***
FI	0.396	0.385	−0.011 (−0.18)
BLOCK	0.342	0.289	−0.053 (−1.55)
LEV	0.248	0.244	−0.004 (−0.28)
LSALES	5.985	6.546	0.561 (9.82)***
MBRATIO	1.205	1.222	0.017 (0.12)
BONUS	0.115	0.180	0.065 (4.22)***

OUT is the proportion of outside board members. FI is a dummy variable equal to one if there is a director from financial services industries on the board and zero if otherwise. BLOCK is the fraction of votes attached to all voting shares controlled by the largest block shareholder. LEV is the ratio of the sum of long-term debt and short-term debt to total assets. LSALES is the natural log of sales. MBRATIO is the market-to-book ratio of assets. BONUS is the average ratio of bonus to total pay for all executives. *N* stands for the number of observations in each subperiod. For Panel A, the pre-Guideline subsample comprises observations for year 1993 and the post-Guideline subsample comprises observations for year 1997. We assume that observations across two periods are independent, but we do not assume equal variances. For Panel B, comparison of variables between the pre-Guideline period (1991–1993) and the post-Guideline period (1995–1997) is made using firms that appear at least once in both periods. Time series averages of variables for each firm are used to test for the difference between the pre- and post-Guideline periods. Observations across two periods are matched.

** Indicates level of significance at 5%.

*** Indicates level of significance at 1%.

pre-Guideline period and observations in 1997 for the post-Guideline period. Of 56 firm observations in 1993, 28 firms fall short of Target1 and 32 firms fall short of Target2, while, of 145 firm observations in 1997, 87 firms fall short of Target1 and 101 firms fall short of Target2. In an unreported table, we make the same comparison using firms that appear at least once in both periods and find that the abnormal accruals do not change from the pre-Guideline period to the post-Guideline period for those firms, either.

Table 9 shows the OLS regression estimates of abnormal accruals with subperiod dummy. The period dummy variable, PD, takes the value of one when observations fall in the post-Guideline period and zero if otherwise. DOUT × NEGDUM1 (NEGDUM2) is an interaction between board independence and the dummy variable for missing Target1(2). Similarly, FI × NEGDUM1 (NEGDUM2) is an interaction between the board representa-

Table 8

Abnormal accruals relative to earnings targets for the pre- and post-Guideline periods

	Pre-Guideline mean	Post-Guideline mean	Difference
UME < Target1	0.199 [28]	0.245 [87]	0.046 (1.36)
UME ≥ Target1	− 0.111 [28]	− 0.097 [58]	0.014 (0.35)
UME < Target2	0.180 [32]	0.218 [101]	0.038 (1.23)
UME ≥ Target2	− 0.138 [24]	− 0.146 [44]	− 0.008 (− 0.17)

Abnormal accruals are measured by subtracting the fitted accruals obtained using the cross-sectional Jones method from the actual accruals. Target1 is zero earnings and Target2 is the earnings in the previous year. UME is the unmanaged earnings estimated by subtracting the abnormal accruals from the reported earnings. The pre-Guideline subsample comprises observations for year 1993 and the post-Guideline subsample comprises observations for year 1997. We assume that observations across two periods are independent, but we do not assume equal variances. Numbers in square brackets next to mean abnormal accruals represent the number of observations. The *t* statistics are given in parentheses next to the difference of mean abnormal accruals. The test of significance is two-tailed.

tion of financial intermediaries and the dummy variable for missing Target1(2). $PD \times DOUT \times NEGDUM1$ ($NEGDUM2$) is an interaction amongst the subperiod, the board independence, and the dummy variable for missing Target1(2). The coefficient of $PD \times DOUT \times NEGDUM$ is not statistically significant, suggesting that the effect of board independence on earnings management is not significantly different between subperiods. Finally, $PD \times FI \times NEGDUM1$ ($NEGDUM2$) is an interaction amongst the subperiod, the board representation of financial intermediaries, and the dummy variable for missing Target1(2). Again, the coefficient of $PD \times FI \times NEGDUM$ is not statistically significant, suggesting that the effect of directors from financial intermediaries on earnings management is not significantly different between subperiods. Even though there has been a small change in the composition of the board from the pre-Guideline period to the post-Guideline period, the board does not seem to be involved in the monitoring of earnings management more actively after the TSE Guideline is adopted. We could not investigate the interaction amongst the subperiod, the board representation of active institutional shareholders, and the dummy variable for missing Target1(2) because the interaction terms were constant.

8. Outside directors' tenure as board members with the firm

In the foregoing discussion, we reported that, in our Canadian sample, outside directors, as a whole, do not constrain earnings management, while directors from financial intermediaries reduce earnings management and that the board representation of active institutional shareholders reduces earnings management further. Also we reported that, while there is a small change in the board composition caused by the Toronto Stock Exchange's Corporate Governance Guidelines of 1994, the monitoring of abnormal accruals by outside directors, as a whole, or officers of financial institutions is not more evident in the post-Guideline period than in the pre-Guideline period. In this section, to shed further light on the reason why there is no evidence of outside directors' effective monitoring of earnings management, we examine whether the tenure of outside directors on the firm's board has an impact on outside directors' ability to monitor earnings management.

Table 9

Ordinary least squares (OLS) regressions of abnormal accruals with subperiod dummy

Variables	I	II
Constant	0.041 (0.42)	0.074 (0.37)
NEGDUM1	0.293 (8.29)***	
NEGDUM2		0.280 (8.99)***
DOUT $\times$ NEGDUM1	−0.004 (0.12)	
DOUT $\times$ NEGDUM2		0.007 (0.21)
PD $\times$ DOUT $\times$ NEGDUM1	−0.005 (−0.15)	
PD $\times$ DOUT $\times$ NEGDUM2		−0.006 (−0.20)
FI $\times$ NEGDUM1	−0.072 (−2.55)**	
FI $\times$ NEGDUM2		−0.052 (−2.02)**
PD $\times$ FI $\times$ NEGDUM1	0.014 (0.38)	
PD $\times$ FI $\times$ NEGDUM2		−0.002 (−0.05)
BLOCK	0.026 (0.93)	0.031 (1.14)
LEV	−0.250 (−3.45)***	−0.273 (−3.87)***
LSALES	−0.012 (−2.03)**	−0.014 (−2.37)**
MBRATIO	0.026 (3.54)***	0.024 (3.45)***
BONUS	0.060 (1.13)	−0.033 (−0.59)
N	377	377
Adjusted R ²	0.569	0.557

Abnormal accruals are measured by subtracting the fitted accruals obtained using the cross-sectional Jones method from the actual accruals. NEGDUM1 takes the value of one when unmanaged earnings are below zero earnings (Target1) and zero if otherwise. NEGDUM2 takes the value of one when unmanaged earnings are below the previous year's reported earnings (Target2) and zero if otherwise. DOUT $\times$ NEGDUM1 (NEGDUM2) is an interaction between board independence and the dummy variable for missing Target1(2). DOUT takes a value of one if the board has a majority of outside directors and zero if otherwise. PD $\times$ DOUT $\times$ NEGDUM1 (NEGDUM2) is an interaction amongst the subperiod, the board independence, and the dummy variable for missing Target1(2). The period dummy variable, PD, takes the value of one when observations fall in the post-Guideline period and zero if otherwise. Similarly, FI $\times$ NEGDUM1 (NEGDUM2) is an interaction between the board representation of financial intermediaries and the dummy variable for missing Target1(2). FI is a dummy variable equal to one if there is a director from financial services industries on the board and zero if otherwise. Finally, PD $\times$ FI $\times$ NEGDUM1 (NEGDUM2) is an interaction amongst the subperiod, the board representation of financial intermediaries, and the dummy variable for missing Target1(2). BLOCK is the fraction of votes attached to all voting shares controlled by the largest block shareholder. LEV is the ratio of the sum of long-term debt and short-term debt to total assets. LSALES is the natural log of sales. MBRATIO is the market-to-book ratio of assets. BONUS is the average ratio of bonus to total pay for all executives. In all models, we control for year, industry, and firm-fixed effects. However, coefficients on the dummy variables for years, industries, and firms are not reported. The sample period is 1991–1997. The sample consists of 377 firm-year observations. The *t* statistics are shown in parentheses.

**Indicates level of significance at 5%. The test of significance is two-tailed.

***Indicates level of significance at 1%. The test of significance is two-tailed.

Experience as board members of the firm allows outside directors to gain a better understanding of the firm and its people, thus enabling them to develop better governance competencies. Consistent with this hypothesis, [Beasley \(1996\)](#) reports that the likelihood of financial reporting fraud decreases with the average tenure of outside directors. More recently, [Chtourou et al. \(2001\)](#) document that the average tenure of outside directors on the company board has a negative impact on the level of earnings management. Since it is possible that, in Canada, average board members are not able to reduce earnings management but experienced outside board members may be able to constrain earnings

management, we investigate the effect of outside directors' tenure on earnings management. Table 10 reports our findings. Panel A shows that the median outside director has a 6-year tenure with the firm and the median inside director has a 7-year tenure with the firm. Panel B reports the OLS regression results of earnings management on the outside directors' tenure with the firm. The estimated coefficients of the interaction terms of outside directors' tenure and the dummy variables for missing Target1 (Regression I) and Target2 (Regression II) are negative but insignificant, suggesting that there is no significant relation in Canada between outside directors and earnings management regardless of directors' tenure with the firm. Our result from a Canadian sample contrasts with the works of Beasley (1996) and Chtourou et al. (2001), which suggest that the tenure of outside directors has an effect on the board's ability to successfully curb earnings

Table 10
The effect of outside directors' tenure on abnormal accruals

Panel A: Tenure of outside and inside directors as board members of the firm in years

Variables	Mean	Median	S.D.
Outside directors	7.078	6	3.801
Inside directors	8.664	7	5.544
All directors	7.553	7	3.781

Panel B: Ordinary least squares (OLS) regressions of abnormal accruals on outside directors' tenure

Variables	I	II
Constant	0.110 (1.43)	0.137 (1.84)*
NEGDUM1	0.284 (10.17)***	
NEGDUM2		0.283 (11.11)***
TENURE × NEGDUM1	− 0.003 (− 0.98)	
TENURE × NEGDUM2		− 0.003 (− 1.17)
BLOCK	0.044 (1.58)	0.047 (1.66)*
LEV	− 0.258 (− 3.56)***	− 0.288 (− 4.06)***
LSALES	− 0.015 (− 2.47)**	− 0.016 (− 2.65)***
MBRATIO	0.023 (2.97)***	0.021 (2.93)***
BONUS	0.044 (0.82)	− 0.041 (− 0.75)
N	469	469
Adjusted R ²	0.564	0.554

Abnormal accruals are measured by subtracting the fitted accruals obtained using the cross-sectional Jones method from the actual accruals. NEGDUM1 takes the value of one when unmanaged earnings are below zero earnings (Target1), while NEGDUM2 takes the value of one when unmanaged earnings are below the previous years reported earnings (Target2). Otherwise, both variables are zero. TENURE × NEGDUM1 (NEGDUM2) is an interaction between outside directors' tenure with the firm and the dummy variable for missing Target1(2). Tenure is calculated as average tenure of outside directors with the firm in a given firm-year. BLOCK is the fraction of votes attached to all voting shares controlled by the largest block shareholder. LEV is the ratio of the sum of long-term debt and short-term debt to total assets. LSALES is the natural log of sales. MBRATIO is the market-to-book ratio of assets. BONUS is the average ratio of bonus to total pay for all executives. In all models, we control for the year, industry, and firm-fixed effects. However, coefficients on the dummy variables for years, industries, and firms are not reported. The *t* statistics are shown in parentheses. The sample period is 1991–1997. The sample consists of 469 firm-years.

* Indicates level of significance at 10%. The test of significance is two-tailed.

** Indicates level of significance at 5%. The test of significance is two-tailed.

*** Indicates level of significance at 1%. The test of significance is two-tailed.

management. There are at least four possible reasons why outside directors, in general, fail to curb earnings management in Canada: (1) outside directors, as a whole, may lack financial sophistication and/or access to relevant information to detect and correct earnings management; (2) outside directors in Canada may be uninterested directors because they lack ownership interest of the firm they monitor; (3) the presence of dominant shareholders in many firms may render it difficult for outside directors to effectively curb earnings management; and (4) the labor market for outside directors may not be well developed in Canada.

9. Conclusion

This paper investigates the effect of the board composition on the practice of earnings management in Canada. This study documents the evidence of accrual management to reach earnings targets. Earnings are managed upward or downward to “hit the targets.” Unlike several existing studies in the US and UK, we find no evidence in Canada of an association between the degree of accrual manipulation and the proportion of outside board members on the board, which suggests that ordinary outside directors are not very helpful to the board in monitoring the firm’s management of earnings. However, we find evidence that the officers of financial intermediaries on the board restrain abnormal accruals when the unmanaged earnings are below the target. We also document some evidence that the representatives of the active institutional shareholders reduce earnings management further. However, we do not find evidence supporting that, after the issuance of the Toronto Stock Exchange’s Corporate Governance Guidelines of 1994, outside directors, as a whole, and directors from financial institutions become more effective in constraining income-increasing accrual manipulation, while the Guideline led to a small increase in the proportion of outside directors. Finally, we do not find evidence that the tenure of outside directors reduces earnings management.

In Section 2, a few possible explanations are suggested for why outside directors are not effective in curbing earnings management in Canada in both pre- and post-Guideline periods. Outside directors, as a whole, may lack financial sophistication and/or access to relevant information to detect and correct earnings management. Further, outside directors in Canada may be uninterested directors because they lack ownership interest of the firm they monitor. Also, the presence of a large number of dominant shareholder CEOs may make it difficult for them to effectively curb earnings management.

Additional reasons may exist as well. Canadian directors’ labor market may not be well developed; we find that a large number of outside directors are either from a small number of large law firms, investment banks, or commercial banks; or CEOs of large industrial firms; or prominent former politicians. The outside directors in Canada may not be truly independent; we notice that Quebec-based firms mostly have prominent members of Quebec as directors, while firms in the other provincial jurisdictions show similar tendency to varying degrees, suggesting that many outside directors in Canada are not strictly at an arm’s length from the management they monitor.

Our findings suggest that adding outside directors to the board may not achieve improvement in governance practices by itself, especially in jurisdictions where ownership

is highly concentrated and the outside directors' labor market may not be well developed. More specifically, policy makers as well as nominating committees of the board may note that financial expertise is an important attribute of outside directors for effective monitoring of earnings management. Finally, our study suggests that officers of financial institutions can serve as an important pool of potential outside directors in countries such as Canada.

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