



Investor Confidence Initiatives

A Cost-Benefit Analysis of Proposed Multilateral Instrument 52-110 Audit Committees

**The Office of the Chief Economist
Ontario Securities Commission**

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Abstract

In applying Cost-Benefit Analysis to the Proposed Instrument 52-110 Audit Committees, the Office of the Chief Economist has constructed an estimate of the number of additional independent directors required and applied survey data to generate a total cost of implementation. For the always more demanding task of estimating potential benefits, an empirical analysis of the impact of independent audit committees on earnings management and economic value-added was used. While previous studies have been mixed on the link between governance and firm performance, results have been much more consistent in finding a connection between independent audit committees and the quality of accounting choices. We extend the analysis to show the impact of reduced earnings smoothing on economic value-added. The total benefits were estimated at \$1.0-\$9.2 billion discounted over ten years relative to total costs of \$43-165 million.

Introduction

The purpose of this Cost-Benefit Analysis (CBA) is to estimate the impact of the introduction of the Proposed Multilateral Instrument 52-110 Audit Committees¹. More specifically, the stated purpose of the Proposed Instrument is to “encourage reporting issuers to establish and maintain strong, effective and independent audit committees. We believe that such audit committees enhance the quality of financial disclosure made by reporting issuers, and ultimately foster investor confidence in Canada’s capital markets.”²

With the requirements of the model in mind, we constructed estimates of the costs likely to be incurred in compliance and the benefits likely to accrue to issuers, the market and investors. As is almost always the case, the cost estimates proved to be the lesser challenge. Based on the new definition of independence, the number of new directors likely to be added, together with the probable cost of hiring and ongoing associated expenses, the cost was estimated at \$37-\$143 million. All figures are based on a ten-year Present Discounted Value (PDV) with a discount rate of 7%. This range represents the wide array of practices, compensation and other costs incurred by TSX firms in running their boards.

A numbers of studies and commentators have noted the lack of clear connection between a firm’s market value and governance characteristics. However, the purpose of the rule is to improve financial reporting. If financial reporting is flawed, the short-term, and possibly even the medium-term, performance of the firm’s equity price may be biased upward. For some period of time, firms who practice earnings management may outperform the rest of the market.

However, ongoing earnings management tends to be a slippery slope. If, in order to report a string of steadily improving earnings, unrealized gains are shifted into the current quarter, the process must be repeated in subsequent quarters. This can create an expanding gap between actual and reported earnings that will eventually burst, leading to a plummeting stock price and leave

¹ Proposed Multilateral Instrument 52-110 Audit Committees,

² IBID, p. 1.

investors less well off than if they had invested in a firm with higher quality disclosure.

The empirical record on the link between governance, particularly the independence of the audit committee and its relationship with the auditor, is much more consistent than between governance and performance.

Based on one measure of earnings management, we found benefits to economic value-added (EVA) for investors of \$1.0-9.2 billion on a PDV basis. While this one measure produces a relatively wide range of potential benefits over ten years, the net impact, even at the upper end of the range, is very likely heavily understated. A more complete analysis, including other measures of earnings management, misstatements and fraudulent reporting would almost certainly generate a substantially higher net benefit. Based on standard CBA practice, though, the lower end of benefits range measured substantially outweighs the upper end estimate of costs, negating the need for further refinement of the estimate.

Background and Academic Literature

Dozens of studies have been published seeking a connection between firm governance and performance. The results have been mixed with some finding a significant relationship and others a small or insignificant connection.

Champions of good governance may be surprised at this, but they should also be aware that a board's primary duties are expected to rest on longer-term vision and the protection of investors rather than on short-term price movements or day-to-day operations. The loss of investor confidence experienced over the past two years, and the regulatory response, have been based on issues with aggressive accounting. More specifically, the Proposed Instrument requiring an independent audit committee would be expected to focus on the accuracy of the regular reports on the firms' financial results and outlook.

One of the most significant issues that tends to degrade market efficiency is information asymmetry. Insiders, among both issuers and intermediaries, have access to information not available to the retail investor. While some degree of information asymmetry is unavoidable, the damage to the investor, investor confidence and market integrity is most substantial when the investor is provided

with misleading information. This can lead to investors paying excessive prices and, subsequently, suffering large losses when more accurate information becomes available.

The uncertainty caused by information asymmetry raises the risk premium and the cost of capital for the market overall. It has also been demonstrated that higher quality disclosure generates improved market liquidity³.

A substantial number of studies internationally have found a link between governance and accounting choices⁴ with much more consistent results than for studies on governance and stock performance. With audit committee composition, auditor reporting and certification at the forefront of the investor confidence initiatives, we have chosen to focus this part of the CBA on the relationship between the existence of an independent audit committee and evidence of aggressive accounting.

Measuring the degree and frequency of aggressive accounting activity is the first challenge. A number of methods have been proposed, depending on the type of behaviour to be estimated. Some firms may seek to avoid reporting negative earnings in a quarter. Others may wish to show consistent growth over a period of a few years or longer. Earnings may also be managed to generate an earnings “surprise” relative to the consensus of the analysts following the stock. This type of behaviour may precede an offering in the market. There is also a demonstrated managerial incentive to understate earnings, or report a loss, in order to set options prices at a favourable level. By shifting earnings forward, managers can price options at a favourable level and move the stock price higher at a later date to improve the profitability of the options granted⁵.

A number of methods have been proposed and evaluated to examine the frequency and impact of each of these methods of earnings management, including the examination of discretionary accruals and event studies. However, all of these approaches would tend to create a deviation between the rate of change between cash

³ Bushee and Leuz (2/02)

⁴ Bowen, Rajgopal and Venkatchalam (2002), Chtourou, Bedard and Couteau (2001), Xie, Davidson and Dadalt (2002), Ching, Firth and Rui (2002), Pincus and Rajgopal (2002), Becker and DeFond (1995), Warfield and Wild (2002),

⁵ Yermack (1997)

flow and earnings. As a result, we have chosen to focus on the difference in volatility between the two, relative to measures of the quality of governance. While earnings management comes in many forms and each of those forms may have a significant impact on shareholder value, the most common variety appears to be earnings smoothing. In order to avoid reporting quarterly losses, firms use accruals and other adjustments to report a string of unbroken earnings growth.

In any given quarter for a firm or a group of firms, there can often be a valid reason for cash flow and earnings to move in different directions. For a large sample of firms to show this behaviour on a consistent basis is suggestive of smoothing activity. Following the work of studies done in the U.S. market, we are using the average volatility in cash flow over twelve quarters divided by the average volatility in earnings. If no earnings management has taken place, this ratio should be close to one.

The definition of independence is key to measuring the effectiveness of governance. A number of studies⁶ have found directors officially designated as independent actually fall into a “gray” area. These directors have a business, ownership or family relationship with the firm, but, based on listing guidelines, are independent. Vicknair et al. found that 79% of NYSE-listed firms had these gray directors on their boards. Wright and Bushee et al. found that the participation of gray directors had a strong significantly negative impact on the quality of financial reporting.

The Proposed Instrument specifically excludes this gray area from the definition of independence. For this reason, a database of the directors of Canadian firms reclassified along these lines had to be created. This was done in conjunction with the Rotman School of Business at the University of Toronto where research was already underway on a similar governance database.

While this represents a significant improvement over current practice, it is impossible to completely remove the gray element in corporate boards. Close associates of firm insiders and other informal relationships can not be eliminated using this definition. While an important consideration, this analysis has been done with

⁶ Bushy and Luez (2002), Wright (1996), Vicknair, Hickman and Cairns (1993)

respect to the Proposed Instrument, as defined, and looks for the impact of 52-110 if imposed on market participants.

Over all firms in the sample, cash flows were more than 2.5 times as volatile as earnings on average, suggesting a significant and widespread practice of earnings smoothing. Similar studies in the U.S. have found a ratio of over three. These studies were done in the late 1990s when the Canadian moving average was in the 3.5-4.0 range as well. This ratio tends to be cyclical in nature with a strong impetus for smoothing during a bull market and much less during a bear market.

In Canada, for the period ending in 2002, one-quarter of the sample firms had a mean ratio of almost six while 44% exhibited a mean of over four. While in any given quarter, there may be a justifiable and legitimate reason for a deviation between cash flow and earnings, persistent differences in volatility of four to six times is highly indicative of earnings management. The high percentage of the sample showing this persistence confirms our choice of this variable as a focus. With the very widespread nature of this activity, efforts to reduce it should show the greatest benefit for the overall market.

The proxies chosen for the quality of governance are based on the measurable components of the Proposed Instrument, an audit committee composed solely of independent directors with the auditors reporting directly to the audit committee.

Our first hypothesis was that firms with a better governance regime would show a lower incidence of earnings smoothing (a ratio closer to one) and that the governance variables would be significant.

Assuming that governance has an impact on the decision to manipulate earnings, we then looked for a connection to shareholder value in order to estimate the benefits of improved governance. This link is also well supported in the studies noted above among others. There are a number of possible measures of shareholder value including equity price movements, market value-added, return on capital, return on equity and total return.

As noted above, the practice of earnings smoothing can lead to out-performance in equity prices over the short-to-medium term. This

helps to explain the lack of connection found between governance and return in many studies done previously. Based on recent studies, we chose to focus on economic value added (EVA)⁷. EVA is defined as the rate of return less the cost of capital multiplied by the capital employed. In other words, is the company generating a sufficient return to cover the cost of obtaining capital and, for the total value, how much capital has been employed?

In addition to the governance factors, other variables found to have a significant impact on EVA were added in order to ensure a robust and fully specified model. These variables included net income, total assets and the weighted average cost of capital.

Methodology and Results

A sample of 306 publicly listed firms on the TSX was used, approximately one-quarter of the total number of firms listed on the TSX. This is almost double the normal sample size expected to show statistical significance.

Costs

Methodology

A corporate governance database for this study was created in a joint project with the Rotman School of Management at the University of Toronto conforming to the requirements of the Proposed Instrument through publicly available company filings on SEDAR and direct surveys. We specifically focused on the data collected on audit committee sizes, the number of independent directors that sit on the audit committee of a company, and the number of independent directors on the board.

The requirement that each audit committee member be independent lies at the heart of the Proposed Instrument. Part 3, Subsection 1.4(1), provides that a member of an audit committee is independent if the member has no direct or indirect material relationship with the issuer. A material relationship is defined in subsection 1.4(2) as a relationship that could, in the view of the issuer's board of directors, reasonably interfere with the exercise of a member's independent judgment. Subsection 1.4(3) identifies

⁷ Hall (2002), Davidson (2001)

certain categories of persons that are considered to have a material relationship with the issuer.

Part 3 of the Proposed Instrument includes certain exemptions to the audit committee independence criteria. Specifically, initial public offerings, controlled companies, and events outside the director's control. For the purpose of our cost calculations, the data is consistent with the Proposed Instrument's definition of independence rather than exchange guidelines.

Further, for an audit committee member to competently discharge his or her duties, the member must be financially literate. Subsection 1.1 defines financial literacy as the ability to read and understand a set of financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of the issues that can reasonably be expected to be raised by the issuer's financial statements⁸. We were unable to determine financial literacy conclusively from either publicly available information or direct survey.

Our approach, to estimate the marginal cost of compliance with 100% audit committee independence, was to estimate the additional costs associated: committee member meeting fees, committee retainer fees, director meeting fees, and director retainer fees. Sample data for the fee structures, and committee sizes employed was obtained from established surveys⁹.

The sample means, medians, and ranges of values for the cost criteria mentioned above are taken from the O'Callaghan and Associates report. The average, median, and ranges of values for board of director and audit committee meetings are taken from Canadian Spencer Stuart Board Index report. The cost ranges

⁸ MI 52-110, *op. cit.*, p. 3

⁹ "Corporate Board Governance and Director Compensation in Canada: A Review of 2001", by Patrick O'Callaghan and Associates, December 2001.

"Smart Boards for Tough Times: 2001 Canadian Spencer Stuart Board Index", by The Clarkson Center for Business Ethics & Board Effectiveness, 2001.

employed were separated by market values. Hence, the lower ranges in our estimates of the marginal costs as outlined above focused on average values for firms with less than \$500 million in total assets. The upper range in our estimates pertains to firms with asset values in excess of \$5 billion.

Our sample selection of firms is based exclusively on TSX-listed companies, and we scaled up our estimates appropriately to form a TSX-level average, median, and range of values. The scaling factor was determined by taking the ratio of total sampled firms to the total number of firms listed on the TSX. Assuming that our sample was representative of the TSX, this should produce a reasonable estimate of the total number of additional independent directors required.

In addition to audit committee independence, we also investigate the supplementary costs associated with having an individual on the audit committee with financial expertise¹⁰. The participation of a financial expert on the audit committee has to be disclosed under the Proposed Instrument. Conversely, if the audit committee does not include a financial expert, the reasons for this absence must be disclosed. The Proposed Instrument does not require the audit committee to have a financial expert nor does it impose any

¹⁰ defined in MI 52-100 (p.2-3) as a person who has:

- (a) an understanding of financial statements and the accounting principles used by the issuer to prepare its financial statements;
- (b) the ability to assess the general application of such accounting principles in connection with the accounting for estimates, accruals and reserves;
- (c) experience preparing, auditing, analyzing or evaluating financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of issues that can reasonably be expected to be raised by the issuer's financial statements, or experience actively supervising one or more persons engaged in such activities;
- (d) an understanding of internal controls and procedures for financial reporting; and
- (e) an understanding of audit committee functions;

requirements on the financial expert with respect to official designations.

While this is a reasonable and flexible approach on the Commission's part, it represents an identification issue for the quantitative analysis. While a financial expert is not required to be on the audit committee under the Proposed Instrument, the Office of the Chief Economist has included estimates for the potential costs of all TSX firms adding a financial expert to provide as much information to stakeholders as possible. For the purposes of the CBA, as a proxy for financial expertise, we use professional designations (i.e. C.A., C.F.A., C.G.A., C.M.A.¹¹). These estimates have not been included in the total projected cost of MI 52-110.

Results

Separate estimates were computed based on the audit and financial expertise criteria that are to be satisfied by each firm. That said, we looked at the independence criteria for the following scenarios:

?? Firms that did not satisfy the independence criteria, and had to resort to the hiring of outside directors.

?? Firms that could achieve partially independent audit committees by moving independent directors currently serving on the board to the audit committee. If there were enough independent directors on the board, but not on the audit committee, to satisfy the criteria, the remainder was added to a "Additional Directors Required" category.

?? Where firms in our sample had an independent audit committee, the marginal cost that would ensue by hiring a director that had some form of financial expertise, as defined above.

The last case warrants special mention. While not required, we performed a "what if?" analysis based on the assumption that all TSX firms currently without a financial expert would hire one. This does not reflect an expectation that this will occur, just a

¹¹ CA; Chartered Accountant, CFA; Chartered Financial Analyst, CGA; Certified General Accountant, CMA; Certified Management Accountant.

means to generate the range of possible cost. In our survey of executive search firms, we found that the cost of recruiting a director with financial expertise was no higher than the cost of hiring any other director. That being the case, we estimate the marginal cost of adding new directors who have financial expertise by considering those firms that currently satisfy the audit committee independence criteria, but do not have an individual that satisfies the expertise criterion.

Of the 306 firms in our sample, 154 companies met the 100% audit committee independence criteria. Hence, potential marginal cost estimates were computed for the remaining 152 companies. Within these 152 companies, a total of 102 companies had inside independent directors that could be switched over to the audit committee in order for the committee to be 100% independent. It is reasonable to assume that companies, which could switch independent directors, would do so to avoid the cost of hiring outside independent directors. Thus, within these 102 firms, a total of 127 directors must be switched to achieve independence. While there may be some additional meeting fees based on replacing inside directors with independents (included in our estimates), the added cost should be minimal.

Of the remaining 50 companies, a total of 24 firms do not have the ability to switch any director to the audit committee. Hence, for these 24 companies a total of 34 independent directors would need to be hired to achieve the independence criteria. For the final 26 companies of our sample, they could achieve partial independence by switching all the available independent directors, but not completely meet the 100% independence criteria. After all of the independent directors were switched, there would still remain a total of 37 directors that needed to be hired by these firms to achieve the independence requirements. In sum, within this sub-sample of 50 companies, the marginal cost associated with hiring **71** (34 + 37) new directors was estimated as shown in Table 1. The total number of directors may be understated since there was no way to evaluate the financial literacy of the independent directors currently serving on boards. However, even with a significant number of additional recruits, the costs should be contained within the upper bounds of our estimate.

Table 1

Summary of sample data – The Proposed Instrument		
	Total Firms	Additional Directors Required
Companies with independent audit committee	154	0
Companies with audit committee that is not independent of which:		
a) Can switch directors	102	0
b) Can partially switch	26	37
c) Must hire directors	24	34
Total	306	71

As noted earlier, under the Proposed Instrument, an issuer is required to disclose whether or not there is a financial expert serving on the audit committee. It was therefore worth investigating the potential marginal cost associated with achieving this standard for the index. For the computation of these marginal costs, we look at the sub-sample of 154 firms that currently have independent audit committees, but do not have a financial expert, as defined for this study. Of the 154 firms, 93 firms have an individual on their audit committee with a financial accreditation. Hence, marginal cost estimates for satisfying both audit committee independence and financial expertise are computed for 61 companies, where a total of **61** directors would need to be hired.

To calculate the marginal costs of compliance with the Proposed Instrument, and the financial expertise criteria, we undertook the following steps:

1. The sample mean, median, and average lower and upper end ranges, as specified in the O’Callaghan and

Associates report, were used to calculate the marginal costs attributed to committee meeting fees, committee retainer fees, director meeting fees, and director retainer fees. For committee and director meeting fees, we simply multiplied the mean, median, and range estimates by the total directors needed, and then multiplied that by the mean, median, and range of audit and board meetings from the Canadian Spencer Stuart Board Index report. For committee and director retainer fees, we multiplied the total number of directors needed by the mean, median, and range estimates of the above mentioned fee structures. Taking the sum of all those figures, we arrived at an estimate of the mean, median, and ranges of marginal costs that are imposed with satisfying each criterion.

2. The PDV of marginal costs, over a ten-year horizon, were calculated at a discount rate of 7%.
3. These numbers were grossed up to TSX-level costs using the ratio of the size of the total listed population on the TSX to our sample size. The total sample size on the TSX was 1299 companies relative to our sample size of 306. This produced a scaling factor of approximately 4.25.
4. Search costs were added after estimates were derived for the PDV of marginal costs in our sample. In the case of audit committee independence, a total of 71 directors needed to be hired by 50 firms. To derive an appropriate range, mean, and median value for these search costs, we assumed that the cost of hiring the first director was 50%, and any subsequent director 10%, of the director retainer fee schedule as outlined in the O'Callaghan and Associates report. That said, 50% of the director retainer fees are used for the first 50 directors, and 10% of the director retainer fees are employed for the latter 21 directors. We utilize the same methodology for estimating search costs for the financial expertise criteria. It should be noted that these are only one-time fees, and are simply added into the total marginal cost estimates, after net present value calculations are performed.

5. The TSX cost estimates were scaled by total index operating expenses, as at December 31, 2002. The total operating expenses were \$2,517 billion¹², presented on a present value basis for comparability with cost estimates.

There has been some speculation that, with the increased attention paid to governance regimes and increased liability associated with recent events, the introduction of the Investor Confidence Initiatives and the increased demand for directors, director compensation will rise.

Based on a survey of major insurance companies in the D&O market, improved governance will, if anything, reduce the liability of the board of directors and audit committee. While there is some degree of probability that directors may choose to serve on fewer boards, our sample indicates no significant pressure on the total available pool. The executive search firms in aggregate do not report any difficulties in attracting potential directors.

More importantly, for the purposes of this analysis, the extent of increased director compensation is solely speculative at this point. Hewitt Associates and Watson Wyatt Worldwide¹³ have recently reported that one-third of Canadian companies are expected to increase compensation this year and that overall compensation would likely rise 10-15% for this year and possibly the next few years, respectively. With no reliable reference for a probable increase in director compensation, we assumed that the cost would grow in line with our discount rate of 7% over ten years. Even if director compensation increases by a factor of 500% over this time period, it would not erase the substantial net benefit projected.

It was assumed that the new directors would be covered under the current directors and officers (D&O) insurance policies and that there would be no increase in costs resulting from the introduction of the Proposed Instrument. A survey of the major insurance companies in Canada confirmed this assumption. A substantial increase in D&O costs in the U.S. over the past year based on a

¹² This data was obtained from the Financial Post database at CHASS - Computing in the Humanities and Social Sciences at the University of Toronto.

¹³ Human Resources and Compensation consultants with international practices.

survey by Foley Lardner¹⁴ has been cited on this topic. That study makes the erroneous assumption that increasing D&O costs are a function of the implementation of the SOX Act. The costs of D&O insurance were on the rise well before SOX was introduced and are a result of a number of factors. The losses associated with the problems at Enron, Worldcom and others would have figured prominently among these factors. Improved governance, with the possible exception of certification as noted above, should reduce the cost of insurance if there is any impact at all resulting from these initiatives.

The following tables highlight the cost ranges for two separate scenarios. **Table 2** shows estimates of the total marginal cost associated with meeting the Proposed Instrument. **Table 3** highlights the estimates of the total marginal cost associated with adding financial expertise based on our proxy of professional designation. These estimates are extremely high end given that the proportion of firms designating a financial expert is almost certainly below 100% and may be well below that point. Also, our proxy of professional designation may be a significantly higher bar than the board will set in determining financial expertise. Estimates after grossing up to the entire index are found immediately below the tables.

Table 2

Meeting Audit Committee Independence Criteria: 71 Total Directors Needed				
	Low Range (<\$500 million)	Total Marginal Cost	High Range (>\$5 billion)	Total Marginal Cost
# Of Audit Meetings	4		12	

¹⁴ Foley Lardner, The Increased Financial And Non-Financial Cost Of Staying Public, April, 2003

# Of BOD Meetings ¹⁵	2		25	
Committee Member Meeting Fee	\$912	\$259,008	\$1,214	\$1,034,328
Annual Committee Retainer Fee	\$2,093	\$148,603	\$4,020	\$285,420
Annual Director Meeting Fee	\$1,084	\$153,928	\$1,328	\$2,357,200
Annual Director Retainer Fee	\$11,616	\$824,736	\$24,949	\$1,771,379
Total Additional Costs		\$1,386,275		\$5,448,327
PDV		\$9,736,615		\$38,226,767
Search Costs		\$314,802		\$676,145
Total		\$10,051,417		\$38,902,912
# Of Audit Meetings	Mean = 8 Median = 8			
# Of Board Meetings	Mean = 9 Median = 9			
Total additional costs based on averages	Total marginal cost: \$2,765,450 Present Value (at 7%) over 10 years: \$19,423,364 Search costs: \$449,147 Total: \$19,872,511			
Total additional costs based on medians	Total marginal cost: \$2,485,000 Present Value (at 7%) over 10 years: \$17,453,600 Search costs: \$406,500 Total: \$17,860,100			

For all TSX-listed companies:

Range of marginal cost: (**\$42,669,251 – \$165,146,676**)

As a percent of total operating expenses: (**0.0017% - 0.007%**)

Average marginal cost: **\$84,360,757**

Median marginal cost: **\$75,817,875**

Note that all values for the overall TSX are expressed in terms of their present values, and they are inclusive of search costs.

Table 3

Meeting the Financial Expertise Criteria: 61 Financial Experts Needed				
	Low Range (<\$500 million)	Total Marginal Cost	High Range (>\$5 billion)	Total Marginal Cost
# Of Audit	4		12	

¹⁵ Based on Smart Boards for Tough Times: 2001 Canadian Spencer Stuart Board Index.

Meetings				
# Of BOD Meetings ¹⁶	2		25	
Committee Member Meeting Fee	\$912	\$222,528	\$1,214	\$888,648
Annual Committee Retainer Fee	\$2,093	\$127,673	\$4,020	\$245,220
Annual Director Meeting Fee	\$1,084	\$132,248	\$1,328	\$2,025,200
Annual Director Retainer Fee	\$11,616	\$708,576	\$24,949	\$1,521,889
Total Additional Costs		\$1,191,025		\$4,680,957
PDV		\$8,719,549		\$33,638,058
Search Costs		\$354,288		\$760,975
Total		\$8,719,549		\$33,638,058
# Of Audit Meetings	Mean = 8 Median = 8			
# Of Board Meetings	Mean = 9 Median = 9			
Total additional costs based on averages	Total marginal cost: \$2,375,950 Present Value (at 7%) over 10 years: \$16,687,679 Search costs: \$505,507 Total: \$17,193,186			
Total additional costs based on medians	Total marginal cost: \$2,135,000 Present Value (at 7%) over 10 years: \$14,995,347 Search costs: \$457,500 Total: \$15,452,847			

For all TSX-listed companies:

Range of marginal cost: (**\$37,015,340 – \$142,796,854**)

As a percent of total operating expenses: (**0.0014% - 0.0056%**)

Average marginal cost: **\$72,986,760**

Median marginal cost: **\$65,598,851**

As is indicated in **Table 2**, range estimates for the marginal cost of achieving the Auditor Committee Proposed Instrument for our sample falls in the range of \$10 million to \$38.9 million. When grossed up to the TSX total, the range comes in at \$42.7 million to \$165.2 million. When expressed as a percentage of total operating expenses, the upper range estimate is less than a hundredth of a percent. From **Table 3**, cost estimates range from \$8.7 million to

¹⁶ Based on Smart Boards for Tough Times: 2001 Canadian Spencer Stuart Board Index.

\$33.6 million for our sample, and when scaled up to the index, the range is \$37 million to \$142.8 million. As in the previous table, the upper range value of marginal costs, as a percent of total costs, is very low. The smaller interval is a reflection of fewer directors that need to be hired to satisfy the financial expertise criteria. Recall that not all firms that were initially in compliance with the audit committee independence had to hire a financial expert, as defined for this study.

Potential Barriers to Entry

As a normal course part of CBA at the OSC, we examine proposed rules and instruments for evidence of an excessive cost load for smaller firms. To comment on these potential barriers, we focus on 52 companies in our sample of firms that exhibit the smallest total asset base (i.e. <\$500 million). From there, we determine the total costs that are imposed on these firms to meet the proposed independence criteria. We then scale those costs by the total operating expenses of this sub-sample to provide an estimate, as a percentage of total operating expenses, that would be incurred by these firms.

The figures employed for the costs associated with committee member, committee retainer, director meeting, and director retainer fees are the low-range estimates (<\$500 million in total assets) for the calculation of total costs in our sample. Within this small sub-sample of 52 companies, a total of 33 firms already satisfy the criteria of the Proposed Instrument. The remaining 19 firms need to hire a total of 23 directors to comply with the Proposed Instrument. The total marginal cost for these 52 firms is \$449,075. Discounted over 10 years at 7%, the total marginal cost estimate is \$3,154,115. Search costs are also added in, estimated at \$133,584 (recall that search costs are 50% of the director retainer fees as specified above, and they are one time costs). Hence, the total cost of satisfying the Proposed Instrument, for this small sub-sample, is \$3,287,699. As a percentage of the present value of total operating expenses¹⁷ (\$1,431,858,967), the additional costs came in at 0.2%.

At less than one quarter of one percent, there should be no undue burden for smaller firms listed on the TSX and the Proposed Instrument is unlikely to form a barrier to entry for new listings. While this is an average and there are some much smaller firms in

¹⁷ As of December 31, 2002, the annual operating expenses for the sample companies were \$203,864,504.

the sample, the survey data¹⁸ also shows that these very small firms pay directors much lower rates of compensation.

Benefits

Methodology

Proposed National Instrument 52-110 Audit Committees is intended to result in TSX-listed issuers having audit committees that are in accordance with its provisions. This will improve the quality of financial disclosure by reporting issuers and therefore improve investors' confidence in Canadian capital markets.

An audit committee independent from company management and related directors should be in a good position to ensure that information disclosed by a firm to the market, fairly portays the "true" financial position and operating results. Therefore the basic premise of this analysis is that a wholly independent audit committee will improve the quality of the firm's financial disclosure which in turn will benefits shareholders. This benefit may not be realised immediately but will accrue over the medium to long term.

The Proposed Instrument also contains provisions which describe the responsibilities of the audit committee. The committee responsibilities include:

- ?? be the direct line of report for an external auditor
- ?? oversee the work of the external auditors engaged for the purpose of preparing or issuing an audit report or related work
- ?? pre-approve all non-audit services to be provided to the issuer or its subsidiary entities by its external auditors or the external auditors of the issuer's subsidiary entities
- ?? recommend to the board of directors the external auditors to be nominated for the purpose of preparing or issuing an audit

¹⁸ Patrick O'Callaghan & Associates, *op. cit.*

report (or any related work), as well as the compensation to be paid to such auditors

?? review the issuer's financial statements, MD&A and earnings press releases before the issuer publicly discloses the information.

Given the nature of these provisions, the best way to gather information regarding compliance was to survey a sample of firms. Each of the firms used in our analysis was contacted by telephone and asked if they met the criteria. This data was then used to construct a variable with a value of one if the criteria were met and zero if not. This variable was incorporated into the model but the results proved insignificant. Since the individuals spoken to were not familiar with the Proposed Instrument, it is possible that the response provided did not accurately reflect the company's true situation. No formal disclosure is currently required in regards to these matters and so it was impossible to verify the survey data. It was therefore decided to exclude this variable from the larger analysis.

Along with provisions regarding committee member independence and auditor oversight, Proposed Instrument 51-110 also requires that each member of the audit committee be financially literate. Financial literacy is defined as follows:

“(T)he ability to read and understand a set of financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of the issues that can reasonably be expected to be raised by the issuer’s financial statements”¹⁹

The data set of governance information used in this analysis did not contain sufficient information to ascertain compliance with this requirement. Clearly an individual's financial literacy must be determined in relation to a specific issuer and collecting data on this proposal requires assembling information regarding each audit committee member's qualifications and experiences. As a result

¹⁹ Proposed Multilateral Instrument 52-110, Ontario Securities Commission 2003, 3.

the requirement for financial literacy was excluded from this analysis.

The first step in the analysis was to find some measure of the quality of a firm's financial disclosure. Firms are faced with a number of pressures to present a steady stream of earnings²⁰. A lack of independence between management and the auditor might encourage behaviour designed to minimize the variability of earnings through the manipulation of earnings accruals. This smoothing of earnings figures over time presents a real risk to companies. Once started the practice can be hard to stop, resulting in the neglect of real problems within the firm, and a loss of credibility if the practice is uncovered²¹.

In order to gauge smoothing, this paper looks at the variability in quarterly cash flow and earnings figures. If, over a reasonable time-span, cash flow is considerably more variable than earnings then there is evidence that the firm is smoothing its earnings stream through the use of accruals. In the analysis below, the ratio of cash flow variability to earnings variability averaged over twelve quarters is used to measure the degree of smoothing. The closer that ratio is to one the less the amount of smoothing taking place.

To calculate the benefits associated with better financial disclosure, the use of earnings management must be related to the value of the firm. It was decided that this would be accomplished through the use of economic value added (EVA). EVA takes into account the cost of acquiring capital, the returns generated from invested capital, and the amount of capital employed. It is a measure of value added generated by management's decisions.

There are a number of ways in which shareholders can be assured of improved independence. As discussed above, this research focuses on the impact of independent audit committees. While all firms listed on the TSX must have an audit committee, there are currently no requirements regarding the composition of that committee.

²⁰ Loomis, 1999

²¹ Niemeier, 2001

Inside or dependent directors are more likely to overlook earnings management or aggressive accounting as they are more likely to gain from such behaviour²². Independent directors are less likely to benefit from the short-term management of earnings and hopefully have more to gain from long term growth. As such, they have a greater incentive to monitor the accounting decisions made and to ensure they positively impact shareholder value.

Since the hypothesis is that audit committee independence impacts EVA through decreased earnings management, the analysis uses a two-stage approach. First the impact of audit committee independence on earnings management was determined and then this was used to identify the indirect affect of the audit committee independence on the average firm's EVA.

Model Design

Dependent variables

Our methodology is based on the premise that the prevalence of earnings smoothing is affected by the lack of oversight by an audit committee independent from company management and other related directors. As mentioned above, the first stage of the analysis is to determine the impact of audit committee independence on management's accounting decisions

The variable used to quantify earnings smoothing is the ratio of the standard deviation of cash flows to the standard deviation of Earnings (*SDRATIO*)²³. The standard deviations were calculated as an average over the trailing twelve quarters.

To calculate this variable data was downloaded from Bloomberg for firm cash flow from operations and EBIT (earnings before interest and taxes) over the 12 quarter period ending March 2003. Then the standard deviation was calculated for both cash flows and earnings and the ratio of the two determined for all firms in the sample.

²² Performance bonuses, stock options, stock based compensation, etc.

²³ Bowen, Rajgopal and Venkatachalam (2002).

$$SDRATIO = \frac{\text{Standard Deviation of Cash flows from Operations}}{\text{Standard Deviation of Earnings Before Interest \& Taxes}}$$

If cash flows were more variable than earnings on an extended basis, it would suggest earnings smoothing. In other words, an *SDRATIO* of greater than 1. Table 4 shows that for the 270 firms for which *SDRATIO* could be calculated, on average cash flows were 2.6 times as variable as earnings. For almost one quarter of firms the average value was 5.8 and for 44% of the sample the average *SDRATIO* was 4.3.

Table 4

Summary statistics (dependent variables)					
	Mean	Std Dev	Median	1 st Quartile	4 th Quartile
<i>SDRATIO</i>	2.5686	2.6928	1.7578	1.1648	2.9166

Once earnings smoothing had been quantified, the next step was to link it to the value of the firm. The dependent variable in this second stage of the analysis was economic value added. EVA is a measure of a firm’s “true” profit in that it is the difference between the after-tax cash flows generated by a business minus the cost of the capital deployed to generate those cash flows. It is calculated as follows:

$$EVA = (\text{Return on Capital} - \text{Cost of Capital}) * \text{Total Capital Invested}$$

Bloomberg was used to access each firm’s return on capital, weighted average cost of capital, and the amount of capital employed. This was done as of May 2003. Once this was complete, EVA was calculated for all firms for which sufficient data was available. Of the original sample, 282 had the required information available.

Table 4 (Cont.)

	Mean	Std Dev	Median	1 st Quartile	4 th Quartile
EVA (\$millions)	-77.7119	371.2971	-9.2738	-62.5877	14.2086

Negative EVA is not necessarily evidence of general poor decision making by firm management. In fact, over 40% of firms in the sample saw increases in their market value between 2001 and 2002. It is possible that, for strategic reasons, firms commit capital to investments that aren't expected to generate returns for quite sometime. These investments can be perceived as valuable and therefore affect the firm's market value²⁴

Economic Determinants

In this section the financial variables used to model *SDRATIO* and *EVA* are discussed.

NET_INCOME - A measure of the firm's profitability and its ability to generate cash flows from capital invested and therefore shareholder value. For all firms the most recent data available as of May 2003 was used.

LASSETS - This is the natural logarithm of the firms total assets as of May 2003. This is used to control for any impact associated with the size of the firm in both stages of the analysis. Larger firms are likely to see a larger EVA in absolute terms due to high levels of capital employed. Larger firms can also face increased pressure from analysts and the market to present a smooth stream of earnings²⁵.

WACC - This is the firms weighted average cost of capital as of May 2003. This is key to the firm's ability to generate value and a component of the calculation of a firm's EVA. Clearly, increases in a firm's cost of capital would have a negative effect on EVA.

²⁴ Desai, Fatemi, and Katz, 1999

²⁵ Levitt, A. 1998. The Numbers Game. Speech delivered to the NYU centre for Law and Business, New York N.Y. Sept 28, 1998. Quoted in Bowen et al, 2002 and Loomis, 1999

MEDIANCASH_DIFF – used in the determination of the effect on SDRATIO. . It is possible that some industries might see more fluctuation in cash flows and therefore a higher value for SDRATIO than others. The variable is used to control for industries that generally see more volatility in accruals and cash flows. This was calculated as the average over twelve quarters of the difference between each quarter’s cash flow and the firm’s median cash flow minus the index average of that difference²⁶. Firms were separated into one of ten GICS industrial classifications

Table 5 provides summary statistics for these economic variables.

Table 5

Summary Statistics (Independent variables)					
	Mean	Std Dev	Median	1 st Quartile	4 th Quartile
<i>NET_INCOME</i>	77.2144	419.1706	13.02	-10.14	86.68
<i>LASSETS</i>	6.5711	2.214217	6.619	5.1814	7.9862
<i>WACC</i>	.08617	.0306	.08	.0654	.1008
<i>MEDIANCASH_DIF</i>	-2.85e-07	106.0674	-2.1569	-8.8088	.6092

Governance Proxies

The Rotman School of Business at the University of Toronto gathered the governance-related information as part of a joint study with the Ontario Securities Commission. Data was collected by examining each firm’s proxy circulars, annual information form, and/or annual reports. This was supplemented with information gathered directly from the company when publicly disclosed information was unclear or incomplete. The research was conducted during the fall and winter of 2002. Information was collected on all the directors of each company and this was used to

²⁶ Gu, Lee, and Rosett, 2002

determine the proportion of independent directors on the board and the firm's audit committee.

There are a number of ways to define “independence” when discussing corporate directors. In this analysis, an individual is deemed to be independent if they meet the following criteria²⁷:

?? not a company executive

?? not a major shareholder

?? not a material business partner or affiliate of the firm, and does not receive compensation from the firm other than that for acting as a director

?? not a family member of any of the above

?? have not been employed by the company during the prescribed period of 3 years

AUDITINDEP – A dummy variable for which a value of 1 indicates that the company has an audit committee consisting entirely of independent directors. Approximately 50% of the firm in the sample had an existing audit committee that was completely comprised of independent directors.

MAJINDEP - A dummy variable for which a value of 1 indicates that the company has a board of directors consisting of a majority of independent directors. Of the sample, 65% of companies already had a board of directors that was majority independent.

Table 6 shows that firms with an independent audit committee tended to be larger in terms of net income and assets but little difference is observable in terms of the firm's weighted average cost of capital.

Table 6

Sample Characteristics			
<i>AUDITINDEP</i>	<i>NET_INCOME</i> <i>(\$millions)</i>	<i>LASSETS</i> <i>(ln\$)</i>	<i>WACC</i> <i>(%)</i>
0	40.561	5.888	.0827
1	112.595	7.2306	.0895

Results

As mentioned earlier, a two-stage process²⁸ was used to analyse the impact of audit committee independence on each firm's EVA.

In the first stage of the analysis *SDRATIO* was regressed on all of the independent variable in order to generate values to be used in the second stage regression, which used *EVA* as the dependent variable.

Table 7 shows that audit committee independence has a significant impact on the variability of cash flows relative to that of earnings. The negative sign on the coefficient indicates that audit committee independence leads to reduced volatility of cash flows relative to earnings. In other words, wholly independent audit committees lead to less smoothing of earnings by management and therefore improved financial disclosure.

The analysis included the board independence variable but that was found to have no significant impact on the incidence of earnings management.

²⁷ This definition is consistent with that contained in Multilateral Instrument 52-110 Audit Committees, OSC 2003, 5-6

²⁸ This was done using a two-stage least squares regression where *SDRATIO* was the instrumented variable.

It is also clear from the regression results that *SDRATIO* has a statistically significant impact on the firm's EVA. The negative coefficient indicates that an increase in earnings smoothing has a negative impact on economic value added. This two step process has shown that audit committee independence affects the quality of financial disclosure and that in turn has an effect on the firm's economic value added.

Table 7

Regression Results		
	Coefficient	Standard Error
First Stage (SDRATIO)		
AUDITINDEP	-0.9215932	0.3912999
Second Stage (EVA)		
SDRATIO	-62.83119	33.57042
NET_INCOME	0.8236517	0.0429907
LASSETS	-52.70982	10.19512
WACC	-1349.295	569.7752
Constant	513.758	97.02675
Observations	260	
Adjusted R ²	.52	

Coefficients in bold are significant at the 10% level

The fit of this model (Adjusted R² = .52) is quite strong in comparison to other studies of governance, accounting choices and performance. Bhagat and Black investigated the effects of board independence and ownership structure on firm performance. In that analysis a number of dependent variables were used (Tobin's Q, Sales to Assets, Operating Income to Sales) and the fit of their

model ranged from .0465 to .4132. Messrs Bowen, Rajgopal, and Venkatachalam (2002) examined the effects of governance on earnings smoothing by management. The adjusted R^2 for their model was .133. In analysing the impact of corporate governance on the level of earnings management, Chtourou, B? dard, Courteau (2001) developed a logistic regression with a Pseudo R^2 in the range of .58 to .62. Hall (2002) examined the determinants of EVA for firms listed on the Johannesburg Stock Exchange. That model, incorporating a number of balance sheet and income statement entries, was able to explain approximately 40% of the variation in EVA when looking at a wide breadth of companies.

The next step in the analysis is to generate dollar amounts for the benefits associated with audit committee independence. Table 7 shows that having an audit committee that consists of all independent directors will on average reduce a firm's *SDRATIO* by -0.9216 percentage points. To be conservative, a range of values based on the estimated coefficient and one standard error on either side of that value are used. The range of impact for audit committee independence is from -1.313 to -0.5303.

Again using the estimated coefficient and one standard error the estimated impact of *SDRATIO* on *EVA* is between -96.402 and -29.2608. Combining these two ranges, the estimated impact of an independent audit committee is increased EVA of between \$15.513 million and \$126.565 million.

Table 8

	Low End	High End
Impact on <i>SDRATIO</i>	-0.5302933	-1.3128931
Impact on <i>EVA</i>	-29.26077	-96.40161
Combined Impact	15.513	126.565

This value is the average per firm and must be grossed up to reflect the benefit to the entire market. To do this, a few assumptions must be made to simplify the process and to ensure that our benefit estimates remain conservative and realistic.

1. The sample is assumed to be representative of all TSX-listed firms and that half of the companies already have independent audit committees. This is probably not the case and may lead to benefits being understated.
2. The second stage regression had an adjusted R-squared of .52. This indicates that our model only accounts for 52% of the variation in the dependent variable. Although this is a strong result for this type of analysis, this number will be used to scale down the total benefits estimate.

Also, the sample firms accounted for 64% of the market capitalisation of the Toronto Stock Exchange, as of December 2002. The calculation of the total benefits associated with independent audit committees is detailed in Table 9. Since the hypothesis is that decreased earnings management has an impact on EVA over the medium to long term, the 10-year PDV of these benefits was calculated using a discount rate of 7%.

Table 9

\$ millions	High End	Low End
Firm Benefit (a)	126.5650086	15.51679028
# firms in sample without pre-existing committee independence (b)	153	153
Gross up factor (c)	64%	64%
Total (a*b*c)	30,246.52	3,708.20
Net Present Value(d)	17,603.75	2,017.02
R-Squared scaling (e)	52%	52%
Total Benefit (d*e)	9,153.95	1,048.85

The analysis conducted results in estimated benefits for Canadian capital markets of between \$1 Billion and \$9.2 Billion. Although this range would normally be tightened, these figures are sufficient to demonstrate the estimated benefits of audit committee independence relative to the costs.

Further Research

This analysis could be extended in a number of ways. First, data regarding auditor oversight could be re-gathered to ensure that the exact wording of the Proposed Instrument is followed and that each firm's compliance or non-compliance is independently evaluated. Audit committee oversight of external auditors is a key contributor to ensuring the quality of a firm's financial disclosure. Given that having the auditor report to the audit committee has been found to be significant in other studies²⁹, not to mention the other requirements of the proposed instrument, this is very likely to represent an understatement of the total benefits from the Proposed Instrument.

Second, the set of governance variables could be expanded to include an assessment of the audit committee's financial literacy. Given that the definition of financial literacy is dependent on the complexity of the firm's operations, compliance with this requirement would have to be assessed through research into each audit committee member's qualifications and experiences. It is expected that this "human capital" provided by financially literate directors would lead to higher quality financial disclosure and over the longer term, increased firm value. It is quite possible that the exclusion of this element from the current analysis had understated the benefits of the Proposed Instrument.

The number of meetings held independently from the board and management may be a useful test of the audit committee's independence and oversight focus.

Finally, the most effective test of the Proposed Instrument and this model would be an impact assessment at least two years following implementation of the Instrument after ensuring compliance with the requirements. If Canada and the U.S. impose similar requirements at roughly at the same time, it would be an excellent

²⁹ Chtourou, Bedard and Couteau (2001), for example.

opportunity to do a cross-border comparison, adjusted for market capitalization and industry concentration. If slightly different requirements are imposed on the firms listed on the TSX-Venture Exchange, measurements of differences in accounting choices may also yield useful results.

Summary

An independent audit committee was found to have a very significant impact on the incidence of earnings smoothing. board independence and the auditor reporting to the audit committee were not found to be significant. Note that, as mentioned earlier, the lack of significance of the auditor oversight variable was probably a result of inaccurate survey data. Other studies have found that any management influence in the auditor-audit committee relationship negates the impact of independence. In our study, the lack of significance in the auditor report variable may be related to data problems. This variable was based on verbal reports from the issuers and may not conform to the requirements of the Proposed Instrument. More specifically, while the audit committee may be exercising oversight of the auditor, there may also be significant management influence in the relationship.

In turn, the earnings smoothing variable was found to have a substantial and robust impact on EVA. In addition, there are other forms of earnings manipulation that would not be accurately captured in our measure.

There may be a significant benefit related to having a financial expert on the audit committee deriving from higher quality reporting and investor perception. Conversely, firms without a financial expert may experience lower investor confidence and a higher cost of capital. With no requirement to have a financial expert in the Proposed Instrument, these costs and benefits were not included in the aggregate numbers.

Through the impact of reduced earnings smoothing and other manipulation as measured by this variable, we would expect benefits in the range of \$1.0-9.2 billion or 0.04-0.4% of total assets, discounted over ten years at a 7% rate.

The overall increase in costs associated with hiring and supporting additional independent directors for TSX firms overall was \$43-165 million on a PDV basis and including one-time costs. Relative to the projected benefits, the cost impact is modest.

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