British Columbia Securities Commission

September 24, 2003

Mr. David A. Brown, Q.C.,
Chair
Ontario Securities Commission
20 Queen Street West
Suite 1900, Box 55
Toronto, Ontario
M5H 3S8

Dear David,

BCSC Comment Letter: Multilateral Instruments 52-108, 109, and 110

We welcome the opportunity to comment on proposed Multilateral Instruments 52-108 *Auditor Oversight*, 52-109 *Certification of Disclosure in Companies' Annual and Interim Filings*, and 52-110 *Audit Committees*, published by twelve CSA members on June 27, 2003, and on the related cost-benefit analysis published by the Ontario Securities Commission on the same date. I am sending our comments to you because they relate mainly to the cost benefit analysis.

As you know, we do not propose to adopt the certification or audit committee instruments in British Columbia, for the reasons set forth in BC Notice 2003/25. Instead we propose to support better corporate governance and more reliable financial disclosure through the requirements proposed in our draft legislation published on April 15, 2003. In our view, that legislation would be less burdensome and more effective in protecting investors and market integrity than the proposed certification and audit committee instruments. We have sought public comment on our proposal to adopt our draft requirements, rather than these instruments. *See* BC Notice 2003/35.

We published the auditor oversight instrument for comment on September 3, 2003 (BC Notice 2003/35).

Both of these notices (BCN 2003/25 and 2003/35) are on our website at www.bcsc.bc.ca. Please consider them as a part of our comments on these instruments.

We have now had the opportunity to review your cost-benefit analysis, which estimates that the instruments will yield benefits of $1 billion to $10.1 billion. This analysis is contained in four documents:

- OSC, *Investor Confidence Initiatives: A Cost-Benefit Analysis (Summary Document)*
- OSC, *A Cost-Benefit Analysis of Proposed Multilateral Instrument 52-110 Audit Committees*
- Charles River Associates, *The Costs and Benefits of Management Certification of Financial Reports*
- LECG Economics Finance, *A Cost-Benefit Analysis of the Multi-Jurisdictional Disclosure System*

Frankly, we were skeptical that the benefits would be that large but we could not ignore the implication that we were missing something significant by not adopting the certification and audit committee instruments. To ensure that we got an independent assessment, we asked corporate governance expert Dr. April Klein, a Professor at the New York University Stern School of Business, to review your analysis. We are sharing her review with you in the hope that you will find it useful in deciding whether to proceed with the instruments. Her analysis is attached to this letter.

Since the proposed audit committee instrument accounts for over 90% of the estimated benefits, we asked Dr. Klein to focus on that aspect of your analysis. Dr. Klein has researched the relationships between board structure and earnings management, and between audit committee composition and firm performance. This research is directly relevant to both of the variables examined in your study.

Dr. Klein's analysis suggests that our initial skepticism was warranted.

Your study estimates that requiring all TSX-listed companies to have fully-independent audit committees would result in benefits ranging between $1 billion and $9.2 billion.

However, Dr. Klein says there are several flaws in the study, any one of which could reduce the demonstrable level of those benefits to zero.

Your study quite properly acknowledges the difficulty of arriving at a precise quantification of benefits, and states that its aim was simply to establish that the benefits would exceed the costs. This is a reasonable approach, but the results of Dr. Klein's review suggest that the costs could well exceed the benefits.

Dr. Klein's review of the benefits estimate

These are Dr. Klein's main criticisms of your study:

1. The study uses only one measure of shareholder benefits – economic value-added (EVA). Dr. Klein says EVA is extremely difficult to measure and she sees no evidence that the study made the necessary adjustments to get it right. It is also possible that the study's results are distorted because it used a time period that coincided with a bear market. Dr. Klein points out that prior empirical findings on how well EVA measures firm performance are mixed, and she believes that alternative measures of shareholder benefits are necessary to support the estimate of benefits. Because the study uses the EVA measure alone, it fails to provide the causal links that are necessary to establish that there will be any benefits from the proposed rule.

2. The study also uses only one measure of earnings management — earnings smoothing. According to Dr. Klein, this is the least appropriate measure of earnings management in this context. The study seeks to examine the economic consequences of reporting strings of unbroken earnings growth, yet earnings smoothing captures the opposite effect. Companies that engage in earnings smoothing may over-report earnings in one period, but this is usually offset by under-reporting in previous or subsequent periods. Dr. Klein says that no benefits can be attributed to the proposed audit committee rule until a more appropriate measure is used to demonstrate the size of any earnings management problem.

3. The study's calculation of earnings smoothing is inherently flawed. As a result of this error, the validity of the overall results is highly questionable.

4. The analysis fails to account for important variables. The study uses a two-stage least squares methodology. It is crucial in applying this methodology to make sure it accounts at each stage for the impact of all the variables that could affect the relationships being tested, in this case the relationship between fully-independent audit committees and earnings management, and then earnings management and firm performance. Unfortunately, the study fails to do that; Dr. Klein describes it as having a "serious 'omitted correlated variables' problem, resulting in biased coefficients." She goes on to say that since the study uses these coefficients to calculate the monetary amounts of shareholder benefits, "this criticism seriously compromises the veracity of the $1 to $9 billion estimated benefits presented by the study."

5. The study says the fit of the model is "quite strong in comparison to other studies on governance, accounting choices, and performance." Dr. Klein says that this statement is misleading because the strength of the fit is explained primarily by variables other than the governance measure contained in the equation. In fact, the contribution of that governance measure is barely significant.

6. The study includes several calculation errors. Dr. Klein says the most egregious of these is the use of an incorrect scaling factor for quantifying economic benefits. This error alone means the study overestimates benefits by 4 to 5 times. Another scaling error involves the number of firms used to multiply the benefit. About this error, Dr. Klein says, "I do not know the effect that this error has on the total benefits. Nevertheless, it is a careless mistake that reduces my confidence in how the benefits were calculated." Overall, Dr. Klein concludes, "There are many errors in how the study calculated its range of estimated benefits. The errors range from miscalculations, to misunderstanding how an R^2 is interpreted, to using biased coefficients. Given these errors, I put little stock in the monetary numbers in Table 9 [the table that sets out the claimed benefits of $1 billion to $9.2 billion]."

7. The study did not test a requirement for only a majority of independent members, instead of complete independence. Dr. Klein's research suggests that less onerous governance requirements on this dimension may be equally effective. This research shows that earnings management could be effectively deterred by requiring only that a simple majority of the audit committee be independent, or indeed, by imposing a majority-independent requirement only at the board level.

Conclusion

In *Investor Confidence Initiatives: A Cost-Benefit Analysis (Summary Document)* you state:

> "There is, however, no degree of certainty on how investors will respond to the initiatives or any possible guarantee that financial misstatements or restatements will be eliminated from the capital markets through the implementation of these measures."

Dr. Klein's independent analysis suggests that this caution is, if anything, understated. The benefits, from the audit committee rule at least, appear to be very questionable. We did not ask Dr. Klein to review your cost analysis but, given the cost surprises being experienced in the United States as a result of the Sarbanes-Oxley legislation, we are concerned that the costs might well exceed the amount estimated in your study.

We believe that regulators should be reluctant to impose rules on market participants in the absence of cogent evidence that the rules proposed are likely to solve the problem, particularly when there is a substantial risk that the costs associated with the rules will exceed the benefits. However, Dr. Klein's research, and the other research referred to in her report that is based on an audit committee independence requirement like that in the proposed instrument, raises serious doubts that this requirement will achieve its stated purpose.

Given the questionable benefits and the cost concerns arising from the U.S. experience, we suggest that you and the other CSA members reconsider whether it is appropriate to proceed with the certification and audit committee instruments in their present form.

I would welcome the opportunity to discuss these comments with you further.

Yours truly,

Douglas M. Hyndman,
Chair

Attachment

cc: CSA Chairs

A Critique of:
Investor Confidence Initiatives: A Cost-Benefit Analysis of Proposed Multilateral Instrument 52-110 Audit Committees

Professor April Klein
Stern School of Business
New York University
New York, New York, U.S.A.

July, 2003

Investor Confidence Initiatives: A Cost-Benefit Analysis of Proposed Multilateral Instrument 52-110 Audit Committees

My Overall Assessment of the Ontario Commission's Study

My overall assessment of the study is that much more work needs to be done to "prove" that mandating all firms to move to independent audit committees would provide substantial benefits to the TSX.

My main criticisms are:

1. The study uses only one measure of shareholder benefits, economic value-added (EVA). EVA is extremely difficult to measure and I see no evidence that the study made the necessary adjustments to get it right. Prior empirical findings on how well EVA measures firm performance are mixed. Therefore, the study should provide alternative measures of shareholder benefits to support its findings and conclusions.
2. The study uses only one measure of earnings management, earnings smoothing. This is the least appropriate measure of earnings management that the study could use. Other studies find no relation between corporate governance and alternative measures of earnings management. The study should use other measures of earnings management to support its findings and conclusions.
3. The study's calculation of the metric, earnings smoothing, is inherently flawed.
4. The two-stage least squares methodology has a serious "omitted correlated variables" problem, resulting in biased coefficients. Since the study uses these coefficients to calculate the monetary amounts of shareholder benefits, this

criticism seriously compromises the veracity of the $1 to $9 billion estimated benefits presented by the study.

5. The summary statistics on the fit of the model are disproportionate with the study's claim that it demonstrates strong links among independent audit committees, earnings management, and shareholder value.
6. The study overestimates benefits by a factor of 4 to 5 times.
7. The study ignores alternative definitions and alternative corporate governance regimes.

Overview of the Study's Results

This study, undertaken by The Office of the Chief Economist of the Ontario Securities Commission, documents both the expected costs and benefits to having all TSX companies adopt fully independent audit committees. The study estimates that the expected costs would range between $42.7 million and $165.2 million. The estimated benefits would range between $1 billion and $9.2 billion. These numbers are impressive and *prima facie* suggest that mandating all companies to move to independent audit committees would be beneficial to shareholders. However, the study has many flaws and ambiguities, which, in my opinion, calls into question the validity of the study's conclusions.

Most of my reservations relate to the benefit side of the analysis and will be the focus of this critique. The Commission's study (hereto called "the Study") uses a two-stage least

squares methodology to evaluate the monetary affects of mandating independent audit committees. The Study uses a subsample of publicly listed firms on the TSX.

Under their methodology, the linkage between audit committee independence and economic benefits is estimated simultaneously as two separate equations. The first equation estimates the affect of audit committee independence on earnings management. This creates an "instrument" for earnings management (SDRATIO*- my star), which is used in a second regression to gauge its affect on the dollar amounts of economic-value added (EVA), the Study's measure for the economic benefit. The Study then extrapolates the sample's results to the entire TSX, arriving at the benefit range of $1 billion to $9.2 billion.

Specific Criticisms of the Study

Criticism 1: The Study uses only one measure of shareholder benefits: EVA

The study uses dollar EVA as its sole measure of shareholder benefits. There are several major problems with this approach.

a. One major problem with using EVA is that all of the Study's conclusions are based on this one measure. Why this measure? What about other measures? Other studies attempting to assess the links between corporate governance attributes and firm performance use Tobin's Q ratio (e.g., Yermack, 1996), stock returns and return on assets (e.g., Klein, 1998), or stock returns and cash flows (e.g., Bowen, Rajgopal and Venkatachalam (BRV] 2002) as measures of firm performance. While Yermack finds a

negative relation between board size and Tobin's Q, BRV finds no relationship between corporate governance and firm performance. More germane to this study, Klein finds no relationship between audit committee composition and (1) stock returns, (2) return on assets, and (3) Jensen's productivity measure. The latter measure is adapted from Jensen's 1993 Presidential Speech at the American Finance Association meetings and is intended to measure the investment strategies and productivity of the firm's long-term assets. The Jensen measure is analogous to EVA in intent; therefore, the contradictory findings in Klein (1998) and the Study should be thoroughly investigated.

The Study also documents a negative link between earnings smoothing and EVA. However, other studies examining associations between earnings smoothing and different measures of shareholder benefits produce mixed results. Bhattacharya, Daouk and Welker (2002) conclude that earnings smoothing is either neutral or detrimental to the market. That is, they find no significant link between cost of equity and earnings smoothing, but a negative association between earnings smoothing and market dollar trading.[1] Trueman and Titman, 1988; DeMarzo and Duffie, 1995; Subramanyanm, 1996 are examples of studies that conclude that earnings smoothing is beneficial to shareholders.

The disparity in findings among these papers places a higher standard on the Commission to show that their conclusions are not based solely on single measures of shareholder benefits and earnings management (see below).

b. A second major problem with using EVA is that EVA is extremely difficult to measure. This results in an errors-in-the-variables problem, which can lead to incorrect coefficients and erroneous inferences based on these coefficients. Put differently, the results reported in the Study may be an artifact in how EVA is measured, and not a reflection of the complex relationships among firm performance, earnings management, and audit committee independence.

EVA is a trademarked variant of residual income, created by Stern Stewart and Company. Ostensibly, it is measured as:

(Return on Capital - Cost of Capital)*Capital Invested. (1)

The return on capital is "true" operating income adjusted for financing activities and accounting rules (NOPAT) divided by capital invested in operating activities. The adjustments to NOPAT are highly sophisticated and, without Stern Stewart's direct formulae, are virtually impossible to replicate. To illustrate this point, Biddle, Bowen and Wallace (1997) and Hall (2002) use different adjustments to net income in deriving NOPAT. Measuring capital invested in operating activities is equally difficult and both papers use different starting bases and adjustments to derive this number. In addition, deVilliers (1997) demonstrates that EVA (their definition) is distorted by inflation and needs to be adjusted for price movements.

[1] A lower cost of equity is beneficial to shareholders because it reduces the firm's financing costs. Increasing trading dollars (more trades are made) is beneficial to shareholders because it reduces trading

The Study uses equation (1) to measure EVA but states that "Bloomberg was used to access each firm's return on capital, weighted average cost of capital, and the amount of capital employed." (p. 22). I am not sure what this means, but it leads me to believe they use a fourth version of EVA.

The differences in definitions are important because different studies reach separate conclusions about how effective EVA is in measuring firm performance. For example, Biddle, Bowen and Wallace (1997) report that EVA does not measure internal firm performance as well as earnings per share; Hall (1999) finds the opposite result.

c. A third problem with using EVA is that over the Study's time period, the average EVA for the sample of TSX firms is negative. Negative EVAs imply that firms, in general, are making poor investment decisions. The Study uses 12 quarters of data ending in March 2003, covering the period March 1999 – March 2003. During most of this period, the TSX was also in a bear market. Thus, most firms saw both declines in EVA and market value over that period.

Since the analysis is performed over this time period, it is important to insure that the Study's results and conclusions are not due to the sample having large numbers of negative EVAs or stock returns. The extant literature suggests that this may be the case.

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costs, thus increasing the liquidity of their shares.

Hall (2002) documents that companies that generate positive EVAs are vastly different than firms that generate negative EVAs. Specifically, in examining what variables determine EVA, Hall (2002) finds that firms with negative EVAs are driven by profitability ratios, but that firms with positive EVAs are driven more by balance sheet ratios. This suggests that positive and negative EVA firms are fundamentally different from each other, different in ways beyond audit committee composition.

Further, in general, empirical findings during upward or downward markets do not necessarily hold when market conditions change. In Klein and Rosenfeld (1987), I demonstrate that event study results obtained during either a bull or bear market are biased downwards or upwards. Hand (2000) finds that during the most recent bull market, EPS was negatively related to shareholder value for internet companies, a result that disappeared when the bull market ended.

In conclusion: The Study's conclusion that audit committee independence brings forth large economic benefits to shareholders is not substantiated by the Study's choice of using EVA alone as its measure of shareholder value. The Study should use alternative measures of shareholder value. In addition, EVA is difficult to measure. Therefore, the Study should (1) better define how EVA is calculated and (2) see how sensitive the results are to different ways of measuring EVA.

Criticism 2: The Study uses only one measure of earnings management.

The Study uses a 2SLS methodology. The critical links in the methodology are (1) audit committee independence relates to earnings management, and (2) earnings management links to EVA. Yet, the Study uses only one measure of earnings

management: the ratio of the standard deviation of cash flows from operations to the standard deviation of EBIT (earnings before interest and taxes) over a 12-quarter period. There are several major problems with this measure, which, in my opinion, seriously comprises the Study's conclusions that the two critical links in their methodology hold.

a. The first problem with the Study's measure is that the Study wants to examine the economic consequences of firms managing their earnings upwards. Yet, the Study's earnings management measure picks up the opposite effect.

To quote from the report:

> "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 reporting earnings that will eventually burst, leading to a plummeting stock price and leave investors less well off than if they had invested in a firms with higher quality disclosure." (pages 1-2).

> "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* (my italics)." (page 3).

> "In order to avoid reporting quarterly losses, firms use accruals and other adjustments to report a string of unbroken earnings growth." (page 4).

The Study uses the standard deviation of cash flows over the standard deviation of earnings to measure earnings management. As the Study acknowledges, this calibrates earnings smoothing, defined as the dampening of earnings changes over time through the purposeful use of accruals (see Ronen and Saden, 1981). Earnings smoothing is the least appropriate measure of earnings management that the Study could use, particularly if the

Commission is interested in evaluating the affects of firms artificially inflating earnings over a sustained time period. In fact, one of the hallmarks of earnings smoothing is that firms can "borrow" income-increasing accruals for a short time period only. This is because under Canadian and U.S. GAAP rules, positive accruals can only be sustained for a short time and must be reversed in the near future.

b. A second problem with using an income smoothing measure is that there are other available measures of earnings management, measures better suited to the study's purpose. Recent studies divide earnings management into three types. They are (1) earnings smoothing, the purposeful use of accruals to dampen earnings fluctuations over time; (2) the use of discretionary accruals by the firm to overstate or understate earnings; and (3) the avoidance by firms to reporting losses.[2] The Study briefly discusses all three measures, but uses only the first measure. The Study should use appropriate variations of the second or third measure to better measure firms' intentions to artificially inflate earnings over time.[3]

c. A third problem is that the Study suggests, erroneously, that the three earnings management measures are interchangeable. Empirical data, however, do not support this assertion. BRV (2002) report Spearman rank correlations of –0.09 between earnings smoothing and the use of discretionary accruals, 0.20 between income smoothing and the avoidance of losses, and –0.25 between discretionary accruals and the avoidance of

[2] These are subtle measures of earnings management. More clear-cut measures would be the examination of firms cited for reporting fraudulent earnings or revenues, or of firms that restated their earnings.
[3] The Study could measure earnings overstatements by using unsigned discretionary accruals as its metric. More positive discretionary accruals would indicate higher earnings.

losses. Correlations measure the similarity in movements over time between pairs of variables. Thus, these correlations imply that 75% to 91% of the movement over time for any of these three earnings management measures is not reflected by the other measures. Spearman rank correlations assume non-normality of the underlying data. Pearson correlations, which assume normality, produce even smaller correlations between each pair of measures.

BRV's study presents additional evidence on the lack of interchangeability among the measures. Using a two-stage least squares methodology similar to the Study, BRV report diametrically different results when using each measure of earnings management. In Tables 3 through 5 of their paper, BRV report first stage regressions of the effects of corporate governance variables on earnings management. They find (1) some evidence that poor corporate governance is positively associated with income smoothing, but (2) no relation between corporate governance and the avoidance of losses, and (3) a negative relation between poor corporate governance and discretionary accruals. Thus, different measures of earnings management produce different conclusions. Leuz, Nanda, and Wysocki [LNW] (2002) acknowledge the variations in earnings management measures by combining the three measures (income smoothing, discretionary accruals, loss avoidance) into one aggregate measure. As they write:

"Earnings management is difficult to measure, especially as it manifests itself in different forms." (page 5, working paper available on www.SSRN.com).

d. A fourth problem with the Study's income smoothing measure is that it does not accurately reflect the manipulation of accruals. The Study uses the standard deviation of

cash flows from operations over the standard deviation of EBIT as its measure of earnings smoothing.

1) The cash to earnings measure is used infrequently in published studies because of the way accounting operating earnings are defined. Operating earnings are operating cash flows plus operating accruals. Income manipulation is the purposeful manipulation of accounting operating accruals. By comparing earnings to operating cash flows, the Study creates noise in the denominator since the variability of earnings includes the variability of operating cash flows as well as the covariance between earnings and operating cash flows.[4] LNW (2002) recognize this issue and use two measures of income smoothing − the Study's measure as well as the correlation between the firm's accruals and operating cash flows. Bhattacharya, Daouk, and Welker (2002) use the correlation between accruals and operating cash flows only.

2) EBIT is a poor choice of earnings. EBIT and operating cash flows (CFO) contain different economic transactions. EBIT does not have interest expenses or revenues, but CFO contains interest cash inflows and outflows. EBIT does not have tax expense, but CFO has tax payments and refunds. EBIT has depreciation charges but CFO does not. EBIT has realized gains and losses from traded investments, but these cash flows are shown in investing cash flows (CFI). EBIT has unrealized gains and losses from traded investments but CFO does not contain these items. These are examples of differences, and do not encompass the entire spectrum of differences between the two measures.

Thus, the ratios generated in the Study may not capture income smoothing but may reflect differences in the transactions between the two measures. For example, the TSX contains 12% financial companies, which have traded securities, causing fundamental deviations between EBIT and CFO that have nothing to do with income smoothing, but with how banks account for their transactions.

In conclusion: The Study's use of the income smoothing variable is fraught with theoretical and empirical difficulties. Given that (1) other earnings management measures exist, (2) these measures better capture the effects of managing earnings upwards, and (3) many studies show differential findings with other earnings management metrics, I suggest that the Study use other measures to validate their results and conclusions. I also have questions about how the Study measures its earnings management variable and wonder the degree to which measurement errors contribute to erroneous conclusions about the linkages between audit committee independence, earnings management, and shareholder benefits.

Criticism3: The Study has a serious omitted correlated variable problem.

The study has a serious omitted correlated variable problem in both stages of its two-stage least squares calculation. As its name implies, omitted correlated variables are independent variables left out of the regression analyses that are related to both the dependent variable and at least one of the independent variables. For example, in the first

[4] Var(Earnings) = Var(CFO+Accruals) = Var(CFO) + Var (Accruals) + Cov(CFO,Accruals).

stage, SDRATIO is regressed on AUDITINDEP and other control variables.[5] An omitted correlated variable would be a variable not included in this regression that is significantly related to both SDRATIO and AUDITINDEP. The statistical consequences of omitted correlated variables are incorrect signs and/or biased coefficients on the included independent regressions. For example, the negative coefficient reported in the first stage regression for AUDITINDEP in Table 7 may be due to AUDITINDEP being correlated with an omitted corporate governance variable (for example, the percent of outside directors), or an omitted control variable (for example, long-term debt) and not necessarily due to a negative relation between earnings smoothing and AUDITINDEP. Similarly, the negative coefficient reported in the second stage on SDRATIO* (the instrument for earnings smoothing) might be due to omitted variables correlated both to earnings smoothing and EVA. Put succinctly, omitted correlated variables lead to biased coefficients, which provide incorrect conclusions about the relationships between sets of variables.

An example of this phenomenon can be seen in BMV's (2002) paper. In table 4, BMV present regressions of earnings smoothing on corporate governance measures and control (economic) variables. In one specification, they regress earnings smoothing on corporate governance variables only. For this regression, the Gompers corporate governance measure is significantly related to earnings smoothing in the predicted direction. However, when they regress earnings smoothing on corporate governance measures and

[5] The Study is ambiguous on what the control variables are. Table 7 presents the coefficient for AUDITINDEP only, suggesting that this variable only was regressed on SDRATIO. However, page 26 of the Study states that "in the first stage of the analysis SDRATIO was regressed on all of the independent variable (sic) in order to generate values to be used in the second stage regression, which used EVA as the

the control variables, the Gompers corporate governance measure becomes insignificantly different from zero.

a. In the Study's first stage equation, there are omitted alternative corporate governance variables that most likely are correlated with SDRATIO and AUDITINDEP. BMV (2002), for example, shows that income smoothing is significantly related to (1) whether the CEO was also the Chairman of the board (2) the proportion of executives on the firm's board (3) board interlocks (4) the number of board meetings and (5) executive compensation contracts. In my study − Klein (2002b) − earnings management is related to (1) the percentage of independent directors on the firm's board, (2) whether a large outside blockholder sits on the audit committee, and (3) whether the CEO is a member of the board's compensation committee. In Klein (2002a), I find that audit committee independence is significantly related to (1) the percentage of independent directors on the board (2) the number of directors on the board and (3) whether a large outside blockholder sat on the audit committee.

b. In the first stage equation, the Study also omits several control variables − non-corporate governance variables − from the regression. BMV (2002) finds statistically significant associations between income smoothing and (1) cost of goods sold and (2) the labor intensity of firms. These results, most likely, are related to accounting and economic factors affecting the income smoothing metric. Klein (2002a, 2002b) finds earnings management and/or audit committee independence to be related to (1) growth

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dependent variable." From this statement, I assume that the Study used NET_INCOME, LASSETS, and WACC (and perhaps MEDIANCASH_DIFF) as control variables in the first stage.

opportunities of the firm, (2) whether the firm reported two or more consecutive losses, and (3) long-term debt.

c. In the second stage equation, many variables related to EVA are not included in the regression analysis. Hall (2002) finds that EVA is significantly related to (1) return on capital employed (ROCE), (2) the company's tax rate, and (3) the inflation rate. He also finds different drivers for positive EVA and negative EVA firms. Biddle, Bowen and Wallace (1997) find evidence that the relationships between EVA and stock returns differ over different time periods.

In conclusion: The Study leaves out many independent variables in the two-stage least squares analysis reported in Table 7. Previous studies relating corporate governance-firm performance-earnings management attributes reveal how sensitive the results are to the regression specifications. Since the study uses coefficients from these regressions to calculate the monetary amounts of shareholder benefits, this criticism seriously compromises the veracity of the $1 to $9 billion estimated benefits presented by the study.

Criticism 4: The summary statistics reported in Table 7 are not proportional to the Study's conclusion that audit committee independence increases shareholder benefits.

The Study's main result is presented in Table 7, which is that SDRATIO* is significantly related negatively to EVA. The Study reports an adjusted R^2 statistic of 0.52 and claims

this is "quite strong in comparison to other studies of governance, accounting choices and performance." (page 27).

This statement is misleading in two ways. First, the t-statistic on SDRATIO* is just 1.90, barely significant at conventional levels ($p<0.10$). Thus, the second key link in the study − that income smoothing is detrimental to shareholder value − is only weakly supported. Second, the t-statistics for all of the control variables are greater than the t-statistic for SDRATIO*, which means that the control variables are contributing most heavily to the 0.52 R^2 value reported in the Study. That is, the t-statistic for NET_INCOME is 19.2; for LASSETS it is 5.2. If one removes NET_INCOME and LASSETS from the regression, the R^2 value would drop dramatically.

The relative contributions of SDRATIO* to the R^2 vis-à-vis the other independent variables in the second equation is important because the Study uses the 0.52 R^2 value as a scaling factor in estimating the EVA dollar amounts This is incorrect because the Study calculates the dollar value affect of SDRATIO* only on EVA. To rectify this, the Study should reduce the R^2 scaling factor to represent the relative contribution of SDRATIO* alone. This, most likely, would reduce the scaling factor by a factor of four to five, thus reducing the Study's estimated dollar range of "benefits for Canadian markets" by 80 – 90 percent.

In conclusion: The Study makes strong assertions about the links between corporate governance, earnings management, and shareholder value. The statistics presented in

Table 7, however, are not proportional to these statements. In fact, the t-statistics and R^2 values reported in the Study only weakly support the Study's conclusions that significant associations exist among these variables.

Criticism 5: There are errors in how the Study estimates the dollar amount of shareholder benefits.

There are several errors in how the estimated benefits to Canadian markets are calculated.

The most egregious error, detailed in the last section, is an incorrect R^2 scaling factor. The factor used by the Study is grossly overstated since it is attributable primarily to NET_INCOME and secondary to LASSETS. To reiterate, this error most likely inflates the stated benefits a factor of 4 to 5.

Second, to reiterate, if the coefficients reported in Table 7 are biased because of omitted correlated variables, then multiplying the coefficients on AUDITINDEP and SDRATIO* will produce an incorrect combined impact, as reported in Table 8.

A third error is that the Study multiplies the firm benefit by 153, the number of firms in the sample without pre-existing audit committee independence. This number is incorrect for two reasons. First, the 153 appears to come from the entire sample of 306 firms; yet only 282 firms were used in the data analyses. Second, since AUDITINDEP is a zero/one variable with zero indicating less than full independence and one representing full independence, the correct variable is the number of firms with pre-existing 100%

audit committee independence. Since I do not know how many firms of the original 282 have totally independent audit committees, I do not know the effect that this error has on the total benefits. Nevertheless, it is a careless mistake that reduces my confidence in how the benefits were calculated.

Finally, I believe that the NPVs calculated in Table 9 are incorrect. The "high end" is an 8-year NPV and the "low end" is a 9-year NPV. The Study claims to calculate both over a 10-year period.

In conclusion: There are many errors in how the Study calculated its range of estimated benefits. The errors range from miscalculations, to misunderstanding how an R^2 is interpreted, to using biased coefficients. Given these errors, I put little stock in the monetary numbers presented in Table 9.

Criticism 6: The study ignores possible benefits of requiring other board or audit committee structures.

The prime conclusion of the Study is that mandating all TSX firms to have audit committees comprised solely of independent directors will increase shareholder wealth. Yet, the Study is silent on whether a lesser standard, for example, requiring firms to have audit committees (or entire boards) with a majority of independent directors, would also increase shareholder wealth.

I bring this up because in Klein (2002b), I find that having a majority of independent directors on the audit committee is more instrumental in deterring earnings management − defined as discretionary accruals − than having an entirely independent audit committee. Further, I also find that having a majority of independent directors on the entire board acts as an effective deterrent of earnings management. My results suggest that alternative corporate governance structures might be more effective than the one examined in the Study. In my opinion, it is incumbent for the Study to examine other options on board and/or audit committee composition.

Overall Conclusion

It is my opinion that the Ontario Securities Commission Study has sufficient flaws to cast serious doubt on the veracity of the Study's conclusion that requiring all listed firms on the TSX to go to fully-independent audit committees would result in estimated benefits for Canadian capital markets of between $ 1 billion and $9.2 billion. I believe that the Study needs major refinements and more importantly, a larger body of evidence to make its primary claims.

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