

ACCOUNTING DISCRETION, HORIZON PROBLEM, AND CEO RETIREMENT BENEFITS

Pavlo Kalyta, *University of Ottawa*

Current version: December 12, 2006

ABSTRACT:

Existing studies show that managers use accounting judgment to increase their compensation. On the other hand, the evidence on the impact of the horizon problem (i.e., the condition in which the anticipated tenure of the manager is shorter than the firm's optimal investment horizon) on discretionary accounting choices is mixed and inconclusive. No research, however, takes into consideration that income increasing accounting choices in final pre-retirement years are particularly appealing to managers whose retirement benefits are contingent on firm's performance. I investigate whether income increasing accruals are associated with the horizon problem when CEO's supplemental executive retirement plan (SERP) benefits are performance-contingent. The result confirms the expectation: I find that discretionary accruals are higher in CEO's final pre-retirement years *only* when CEO's SERP benefits are performance-contingent.

Keywords: *accounting discretion, earnings management, horizon problem, retirement benefits, SERP*

* **Contact information:** University of Ottawa, School of Management, 136 Jean-Jacques Lussier St., VNR 241, Ottawa, Ontario, K1N 6N5, Canada. E-mail: kalyta@management.uottawa.ca

© Pavlo Kalyta

ACCOUNTING DISCRETION, HORIZON PROBLEM, AND CEO RETIREMENT BENEFITS

1. INTRODUCTION

Among the conditions that potentially affect discretionary accounting choices are management compensation contracts and the horizon problem – the condition that occurs when the anticipated tenure of the manager is shorter than the firm’s optimal investment horizon. In general, the research confirms that managers do use accounting judgment to increase their compensation. On the other hand, empirical evidence on the impact of the horizon problem on accounting choices is rather mixed and inconclusive: while some studies report no association between the two, others conclude the opposite. However, no research considers that manager’s retirement plan may have a significant moderating impact on the relationship between discretionary choices and the horizon problem. Specifically, a manager may have a Supplemental Executive Retirement Plan (hereafter, SERP) under which the manager’s pension is a function of firm’s performance in manager’s final pre-retirement years. Such manager is particularly incited to make income increasing accounting choices in these years, thereby amplifying his pension.

I investigate empirically whether income increasing accruals are associated with the horizon problem when CEO’s SERP benefits are contingent on firm’s performance. The seven-year data on S&P/TSX60 firms is adopted for the analysis. To verify the predicted relationships, discretionary accruals are regressed on the interaction of the proxy for the horizon problem with the performance-contingency of CEO’s SERP. The results confirm that discretionary accruals are higher in CEO’s final pre-retirement years *only* when CEO’s SERP benefits are performance-contingent.

The rest of the paper is organized as follows. Section 2 reviews the literature on the impact of compensation contracts and the horizon problem on accounting discretion, describes the nature of SERPs and develops the research hypothesis. Section 3 highlights methodological avenues undertaken. Results are then discussed in Section 4. Section 5 concludes.

2. DEVELOPMENT OF RESEARCH HYPOTHESIS

2.1. Existing Literature

There exist a number of ways in which a manager can use his judgment to make a particular accounting choice. Most common examples include the choice of depreciation (straight-line or accelerated) and valuation (FIFO, LIFO, or weighted-average) methods, estimations of future events (e.g., deferred taxes, losses from bad debts, pension obligations and salvage values), etc. Furthermore, a manager can choose to defer or incur R&D, marketing or any other business expenses: decisions that would ultimately impact firm's financial reports. Academic interest in this area started with a proposition that discretionary accounting choices could be used specifically to mislead stakeholders about firm's economic performance: a practice referred to as earnings management. The chain of infamous corporate scandals in North America further fueled that interest. As a result, over past several decades, discretionary accounting choices have grown to one of the major topics in the academic accounting literature.

One of research directions in the earnings management literature is identifying conditions in which incentives to manage earnings are likely to be strong, and then empirically investigating whether patterns of unexpected accruals are consistent with these incentives. Among conditions that potentially incite earnings management practices are management compensation contracts. Watts and Zimmerman (1986) develop the bonus plan hypothesis and argue that managers are

incited to manage earnings to increase the amount of their bonus compensation. According to Healy (1985) firms that cap bonus awards are more likely to report income-deferring accruals when that cap is reached than similar firms with no bonus cap. However, later studies by Gaver et al. (1995) and Holthausen et al. (1995) reject the hypothesis that managers manipulate earnings in response to their bonus plans. On the other end, Guidry et al. (1998) show that divisional managers are likely to defer income when the earnings target in their bonus plan will not be met and when they are entitled to maximum bonuses permitted under the plan. Murphy (2001) examines how the choice of external or internal performance standards affects firm's performance and realized compensation. The study shows that firms with internal performance standards have less-variable bonus payouts and are more likely to smooth earnings than firms with external performance standards.

Other compensation arrangements also appear to be linked to discretionary managerial choices. Bartov and Mohanram (2004) hypothesize that compensation drives earnings management decisions and examine large stock option exercises by corporate insiders. The authors document that in the pre-exercise period, discretionary accruals are abnormally high, while in the post exercise period, they are abnormally low: a result consistent with prior evidence that executives opportunistically time the option-grant date (Yermack, 1997) and disclosures around option-grant dates (Aboody and Kasznik, 2000).

A number of studies examine whether earnings management is influenced by the horizon problem, which may occur when the anticipated tenure of the manager is shorter than the firm's optimal investment horizon. In that case, a manager would prefer projects with lower NPV but higher current accounting earnings than projects with higher NPV but lower current earnings (Smith and Watts, 1982). The horizon problem is especially pronounced when the manager

approaches retirement (as opposed to leaving the firm and staying on the job market), as his concerns about the discipline from managerial labor markets become weaker or disappear (Gibbons and Murphy, 1992).

Empirical evidence on the impact of the horizon problem on accounting choices is scarce and mixed. According to Pourciau (1993), contrary to expectation, departing executives record accruals and write-offs that decrease earnings during their last year of tenure. DeAngelo (1988) finds that during proxy contests, incumbent managers exercise accounting discretion to improve reported earnings. Wells (2002) finds little empirical support for CEOs undertaking upward earnings management before a CEO change for a sample of Australian firms. Butler and Newman (1989) and Dechow and Sloan (1991) hypothesize that CEOs have incentives to reduce such discretionary expenditures as R&D and advertising in their last years to boost accounting earnings and – as a result – their bonuses. Dechow and Sloan (1991) support the argument by empirical results. Gibbons and Murphy (1992) also find that the growth rate of R&D intensity slows down as the CEO approaches retirement. According to Barker and Mueller (2002) and Lundstrum (2002), CEO's age is negatively associated with R&D spendings. However, after controlling for endogenous CEO turnover and firm performance, Murphy and Zimmerman (1993) find little support for the impact of the horizon problem on R&D expenditures. Specifically, the study finds no evidence of managerial discretion in strongly performing firms where the CEO retires as part of the normal relay process, i.e. when executive change is an orderly and well-planned event which usually concludes with the departing executive remaining a member of the board of directors (Vancil, 1987). In addition, Cheng (2004) finds no association between CEO turnover and R&D expenditures, speculating that the result may differ from that of Dechow and Sloan (1991) due to a different time frame considered.

To summarize, in general, the existing empirical evidence indicates that managers do make accounting decisions to increase their compensation but fails to establish that managers are more incited to manage earnings to increase their compensation in final years prior to retirement than in any other year. None of existing studies, however, takes into consideration that some CEOs are considerably more incited to manage earnings in their final pre-retirement years than others due to the nature of their retirement arrangements, as the following discussion suggests.

2. 2. SERPs

SERPs exist because of limitations imposed by governments on the final retirement income under regular pension plans. For example, in Canada, the *Income Tax Act* sets the limit on Registered Pension Plans at \$2,111 per year of pension plan membership, paid annually to a retiree.¹ As a result, a retiree with 35 years of pensionable service is entitled to a maximum annual pension of \$73,885 (35 * \$2,111) – a modest fraction of pre-retirement income for many executives.² A similar limitation exists in the United States where defined pension plans are regulated by the *Internal Revenue Code* and the *Employee Retirement Income Security Act*. The annual compensation for determining pension benefits under a qualified plan (i.e., pensionable earnings) is capped at US\$210,000. Consider the example of a CEO who retires in 2006 with a US\$2,000,000 pre-retirement base salary, 35 years of pensionable service and the pension plan that calls for 2% of the last base salary multiplied by the number of years of pensionable service

¹ Unless noted otherwise, all monetary values in the study are expressed in Canadian dollars. 1 Canadian dollar \approx 0.8 U.S. dollars.

² In 2003, the median base salary of CEOs of the S&P/TSX60 firms was \$0.9 million, while their median cash compensation was \$1.7 million (Kalyta and Magnan, 2007).

to be paid to CEO annually upon retirement. In this case, CEO's annual pension would not exceed US\$147,000 ($35 * 2\% * US\$210,000$).

A SERP permits to avoid limitations imposed on regular pension plans. Under a SERP, a firm makes ongoing payments to a retired executive on top of the regular pension until his or her death, and often – until the death of the surviving spouse. Existing research shows that SERPs are common and sizable. Kalyta and Magnan (2007) find that about 75% of CEOs of S&P/TSX60 firms have supplemental retirement plans. The average actuarial value of these SERPs is \$6 million. The average annual pension increment (the amount by which the present value of a SERP increases over a given year during CEO's employment) is \$1.2 million, or almost 63% of cash compensation. Sundaram and Yermack (2007) yield similar results for the random sample of 237 Fortune 500 firms. Kalyta and Magnan (2007) also find that the pension increment is substantially higher in the last year prior to CEO's retirement than in any other year.

2. 3. Hypothesis

Typically, annual SERP benefits are calculated as a certain percentage (multiplier) of pensionable earnings *times* number of years of pensionable service *minus* capped regular pension benefits (i.e., \$73,885 in Canada). However, the way SERP components are determined varies significantly from one CEO to another. Specifically, all CEOs can be classified into three groups: (1) CEOs without SERP arrangements; (2) CEOs with SERP arrangements in which pensionable earnings consist of base salary only, and are therefore not contingent on firm's accounting earnings; and (3) CEOs with SERP arrangements in which pensionable earnings are determined based on salary and bonus and are therefore contingent on firm's performance via the bonus part. An increase in accounting earnings is most beneficial to CEOs from the latter group, as not only

their bonus compensation will increase, but also the value of the pension plan. Under existing SERPs, pensionable earnings are usually determined in last several years immediately prior to retirement (hereafter, *determination years*), so the beneficial impact of accounting earnings on compensation is specifically pronounced when such CEO approaches retirement. The following example illustrates the potential magnitude of the impact of bonus compensation on CEO's pension benefits. Consider a retiring CEO, with 20 years of credited service, aged 60, whose annual pension is to be determined by the product of cash compensation (base salary plus annual bonus) in the last year prior to retirement, years of credited service and multiplier of 2%. If the salary of the CEO in the last year prior to retirement is \$1,000,000 and the bonus is \$0, his annual pension will be $(\$1,000,000 + 0) * 20 * 0.02 = \$400,000$ and the actuarial value of the pension plan will be \$5,637,378, assuming the discount rate of 0.05, life expectancy of 85 years, and no surviving spouse. If, however, the salary of the CEO in the last year prior to retirement is \$1,000,000 and the bonus is \$1,000,000 as well, his annual pension and the actuarial value of his pension plan will increase to \$800,000 and \$11,275,156 respectively. In other words, \$1,000,000 of bonus compensation would actually increase the wealth of the CEO by \$6,637,378 $(\$1,000,000 + \$11,275,156 - \$5,637,378)$, and not by \$1,000,000. Neither CEOs without SERPs nor CEOs with SERP arrangements in which pensionable earnings consist of base salary only would enjoy such indirect increases in their wealth. Consequently, payoffs of income increasing accounting choices in determination years are particularly significant for CEOs whose SERPs are performance contingent. Such CEOs are motivated to make income increasing decisions to amplify their pensions. I test the following prediction on the impact of CEO SERPs on discretionary choices:

HYPOTHESIS: *Discretionary accruals are positively associated with the horizon problem when CEO SERP benefits are contingent on firm's accounting earnings.*

To the best of my knowledge, the hypothesis has not been examined in the literature. By analyzing associations of CEO SERP benefits with discretionary accruals, the study makes an important contribution to several streams of the academic research. First, a previously unexplored dimension of the relationship between the horizon problem and discretionary accounting choices is investigated. Prior evidence in this area is mixed and inconclusive. However, no prior research considers that CEOs approaching retirement are heterogeneous with respect to their incentives. Specifically, CEOs with performance-contingent SERPs may be more incited to make income increasing discretionary choices and amplify their retirement benefits than other CEOs. As such, a researcher may conclude that no association between the horizon problem and accounting choices exists *in general*, when in fact such association does exist for one group of CEOs and does not exist for the other.

Second, investigating the links between CEO SERP benefits and discretionary choices contributes to the stream of research on the role of executive compensation. Existing studies in this area provide empirical evidence that specific executive compensation components do impact accounting choices and decisions in one way or another. At the same time, implications of CEO SERP benefits remains unexplored – even though SERP benefits are common, sizable and represent a unique post-retirement compensation arrangement, incomparable to other pay components.

3. METHODOLOGY

Accounting accruals can be classified into normal (non-discretionary) and abnormal (discretionary) components, a general framework outlined by McNichols and Wilson (1988):

$$TACC = NDACC + DACC \quad (1)$$

where:

<i>TACC</i>	=	total accruals
<i>NDACC</i>	=	non-discretionary accruals
<i>DACC</i>	=	discretionary accruals

Discretionary accruals are considered to be the outcome of managerial opportunistic choices. To calculate discretionary accruals, I first measure total accruals using the cash-flow method suggested by Hribar and Collins (2002):

$$TACC_{it} = EBXI_{it} - CFOCO_{it} \quad (2)$$

where *TACC* is as defined earlier and:

<i>i, t</i>	=	firm and year indicators
<i>EBXI</i>	=	earnings before extraordinary items and discontinued operations
<i>CFOCO</i>	=	operating cash-flows from continuing operations

To measure discretionary accruals, I rely on the widely used modified Jones model (Dechow et al., 1995), in which:

$$TACC_{it}/A_{it-1} = \alpha_1/A_{it-1} + \beta(\Delta REV_{it} - \Delta REC_{it})/A_{it-1} + \gamma PPE_{it}/A_{it-1} + \delta CFO_{it}/A_{it-1} + \varepsilon_{it} \quad (3)$$

where *TACC* is as defined earlier and:

<i>A</i>	=	total assets
ΔREV	=	change in sales revenue
ΔREC	=	change in accounts receivable
<i>PPE</i>	=	property, plant and equipment
<i>CFO</i>	=	operating cash-flows

Discretionary accruals are then defined as the residual of (3):

$$DACC_{it} = TACC_{it}/A_{it-1} - [\alpha_1/A_{it-1} + \beta(\Delta REV_{it} - \Delta REV_{it-1})/A_{it-1} + \gamma PPE_{it}/A_{it-1} + \delta CFO_{it}/A_{it-1}] \quad (4)$$

Finally, to test the Hypothesis, the following empirical model is estimated:

$$DACC_{it} = \beta_0 + \beta_1 HORIZON_{it} * BONSERP_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 GROWTH_{it} + \beta_5 PERF_{it-1} + \beta_6 LCFO_{it} + \varepsilon \quad (5)$$

where *DACC* is as defined earlier and:

<i>HORIZON</i>	=	proxy for the horizon problem, either of the following dummy variables: $HORIZON^{DET}$: equal to one if <i>t</i> is a determination year, zero otherwise $HORIZON^0$: equal to one if <i>t</i> is the last year prior to CEO's retirement, zero otherwise
<i>BONSERP</i>	=	dummy variable equal to one if CEO's SERP benefits are determined

		based on bonus compensation, zero otherwise
<i>DETYRS</i>	=	number of determination years
<i>SIZE</i>	=	natural log of total assets
<i>LEV</i>	=	total debt / total beginning assets
<i>GROWTH</i>	=	book value of equity / market value of equity
<i>PERF</i>	=	income before extraordinary items / total beginning assets
<i>LCFO</i>	=	natural log of cash-flows from operations

Multiple annual observations for a particular CEO are expected to be correlated. Since the data is clustered, and within-cluster correlation is reasonably expected, the regression relies on standard panel data models that account for CEO-specific effects (i.e., Huber-White standard errors). According to the Hypothesis, the β_1 coefficient is expected to be positive and significant. To clarify whether the horizon problem appears in the last year prior to CEO retirement or when the determination period begins, two alternative proxies for the horizon problem are employed: $HORIZON^{DET}$ and $HORIZON^0$. In the first case, the horizon problem spans over a longer period of time: the impact on discretionary accruals is hypothesized in all determination years. In the second case, the horizon problem affects a shorter period: earnings management is hypothesized only in the final year prior to CEO's retirement. The model is run separately for each proxy. The variable of interest is a dichotomous variable that takes the value of one in observations with hypothesized earnings management, and the value of zero in observations with no hypothesized earnings management. As in prior studies, the regression is controlled for common firm-level factors that may affect discretionary accounting choices and decisions: performance (among others, Klein, 2002; Chung and Kallapur, 2003; Butler et al., 2004), growth opportunities (Klein, 2002; Menon and Williams 2004, Butler et al., 2004), leverage (DeFond and Jiambalvo, 1994;

Becker et al., 1998; Kim et al., 2003; Butler et al., 2004), and operational cash-flows (Becker et al., 1998; Chung and Kallapur, 2003; Frankel et al., 2002; Kim et al., 2003; Menon and Williams, 2004). ROA is used as a proxy for firm performance, debt-assets ratio – as a proxy for leverage, and book-to-market ratio – as a proxy for growth opportunities. Although the measure of discretionary accruals is deflated by total assets, an association between *DACC* and firm size may still exist (e.g., Kim et al., 2003; Menon and Williams, 2004). Therefore, the log of assets – a proxy for firm size – is included in the earnings management test as another control variable.

4. RESULTS

4.1. Data

The sample of CEOs of 60 Canadian firms that comprised S&P/TSX60 index in 1997 is adopted for empirical investigations.³ Data is collected for the seven-year period between 1997 and 2003. Information on CEO SERP benefits is retrieved directly from annual proxy statements. Financial data is retrieved via Compustat, The Report on Business Top 1000 and corporate financial statements. To account for inflation, all monetary values are converted into 2003 dollars using historic CPIs.

4.2. Descriptive Statistics

The sample contains 116 CEOs, of whom 73 retired during the 1997-2003 period. Figure 1 illustrates the breakdown of retired CEOs according to their retirement arrangements. 20 CEOs retired with no supplemental retirement plans. 19 CEOs had SERPs that were not performance-contingent. Finally, 34 CEOs had SERPs contingent on firms' accounting earnings.

³ See Kalyta and Magnan (2007) for the list of firms.

*** FIGURE 1 ABOUT HERE ***

If the horizon problem does affect accounting choices in last years prior to CEO's retirement, the next CEO will have limited means to make income increasing discretionary decisions due to accrual reversals. To alleviate the potential impact of the horizon problem associated with the departure of the previous CEO, the following criterion is imposed: a retiring CEO must have held the position for more than two full years. As a result, two observations are eliminated leaving 32 retired CEOs with performance-contingent SERPs. In total, there are 99 determination years for CEOs with performance-contingent SERPs during the 1997-2003 period, an average of 3.1 years per CEO. The total number of observations in the sample is 395: 25.1% of observations represent determination years, while the remaining 74.9% represent non-determination years.

Table 1 shows descriptive statistics for the sample partitioned according to the *HORIZON*BONSERP* interaction (i.e., observations in which managers are incited to make income increasing discretionary choices are compared to remaining observations). Two definitions of the horizon problem are verified in the study: $HORIZON^{DET} = 1$ and $HORIZON^0 = 1$. In the first scenario, CEOs with performance-contingent SERPs are incited to increase discretionary accruals in their determinations years. In this case, the sample is partitioned as in Panel A of Table 1: 99 observations in which managers are incited to make income increasing discretionary choices, and 296 remaining observations. T-tests indicate that observations with income increasing incentives are characterized by significantly higher discretionary accruals (*DACC*) as derived from Equation (4) and absolute values of discretionary accruals ($DACC^{ABS}$), an alternative commonly-used proxy for discretionary choices.

*** TABLE 1 ABOUT HERE ***

In the second scenario, CEOs with performance-contingent SERPs are incited to increase discretionary accruals in their final year prior to retirement. In this case, the sample is partitioned as according to Panel B of the Table 1: 32 observations in which managers are incited to make income increasing discretionary choices, and 363 remaining observations. T-tests find no difference in signed and unsigned discretionary accruals between the two subsamples. The result supports the notion that the horizon problem appears *earlier* than in the final year prior to CEO's retirement. To summarize, the univariate analysis provides preliminary evidence that discretionary accruals are higher when CEO's with performance-contingent SERPs are in their determination years. Multivariate analysis is conducted to further investigate this matter.

4. 3. Multivariate Analysis

To test the Hypothesis, Equation (5) is estimated, using four separate OLS regressions with either $DACC$ or $DACC^{ABS}$ as the independent variable and either $HORIZON^{DET}$ or $HORIZON^0$ as the proxy for the horizon problem. The variable of interest is the interaction between the horizon problem and the performance-contingency of CEO's supplemental pension arrangements, $HORIZON*BONSERP$. Table 2 reports the results of the regressions. In general the results support the univariate analysis. After controlling for size, leverage, profitability, growth opportunities and operational cash-flows, firms in which CEOs with performance-contingent SERPs are in their determinations years are characterized by larger abnormal accruals (Panel A). Coefficients on the $HORIZON*BONSERP$ interaction are statistically significant when signed abnormal accruals are used as the dependent variable (0.009; $p < 0.01$) and when absolute abnormal accruals are employed (0.051; $p < 0.05$). In other words, income increasing choices appear to be positively associated with the horizon problem when SERP benefits of the CEO are

contingent on firm's accounting earnings.

*** TABLE 2 ABOUT HERE ***

The results display marginally significant difference in signed (0.007, $p < 0.10$) and absolute (0.019, $p < 0.10$) abnormal accruals when CEOs reach the *last* year of their employment (Panel B). This can be explained by the fact that observations corresponding to determination years *other than the last year* are included in the sub-sample with no hypothesized income increasing incentives, whereas income increasing incentives do exist in these years, as confirmed by results in Panel A. As an additional test, the model is estimated without observations in determination years *other than the last year* (not reported for brevity). When observations corresponding to the last year of CEOs' employment are compared with observations in non-determination years only, coefficients on signed and unsigned abnormal accruals are positive and significant at the 5% level. Overall, the results underline an important point: the horizon problem is not limited to the last year prior to CEO's retirement but to the determination period in general. Income increasing decisions are made in all years in which CEO's pensionable earnings are determined, and not only in the last year prior to CEO's retirement.

To summarize, the results lead to the conclusion that a positive association between income increasing decisions and the horizon problem exists when CEO SERPs are contingent on firm's performance. The analysis also indicates that the impact of the horizon problem on the accounting discretion surfaces not in the last year prior to CEO's retirement, but earlier – when the determination period starts.

4. 4. Sensitivity Tests

Several additional tests are performed to analyze the sensitivity of the earnings management test. First, to verify that abnormal accruals are associated with the *HORIZON*BONSEPR* interaction and not with *HORIZON* and/or *BONSEPR* separately, all regressions are run with *HORIZON* and *BONSEPR* instead of *HORIZON*BONSEPR*, or with *HORIZON*, *BONSEPR* and *HORIZON*BONSEPR* simultaneously. When considered separately, neither *HORIZON* nor *BONSEPR* has a statistically significant association with abnormal accruals. Second, estimating total accruals with the balance sheet approach instead of the cash-flow approach does not affect the results qualitatively. Under the balance sheet approach, total accruals are calculated as change in current assets minus change in current liabilities minus change in cash and cash equivalents plus change in short-term debt minus change depreciation and amortization expense, and then deflated by lagged total assets to control for scale differences. Third, the results remain qualitatively unchanged when the Jones model (Jones, 1991) is used to estimate abnormal accruals, instead of the modified Jones model. Under the Jones model, abnormal accruals are estimated as the residual from the regression of current accruals on the reciprocal of total assets, change in revenue and property, plant and equipment, with all variables deflated by lagged total assets (i.e., Equation (3) without operational cash-flows and changes in receivables). Fourth, the results remain qualitatively unchanged when the proxy for size is not included in the main regression. The results are also qualitatively unchanged when the absolute value of abnormal *current* accruals is used. For this purpose, current accruals are defined as the change in non-cash working capital. The abnormal component is the residual from the regression of current accruals on the reciprocal of total assets, change in revenue minus change in receivables, and operating cash-flows, with all variables deflated by lagged total assets (i.e., Equation (3) without *PPE*).

Fifth, the results are not affected by the inclusion of book-to-market ratio as an additional explanatory variable in the Modified Jones model. Finally, to verify the sensitivity of results to choices of size, performance and leverage measures, all models are re-estimated with alternative proxies for firm-level economic factors. Using alternative proxies for firm size (assets, log assets, revenue, log revenue), accounting performance (net income, ROA, EBIT) and leverage (debt-assets ratio, debt-equity ratio) does not qualitatively affect results and conclusions. In all alternative models, the coefficient on the *HORIZON*BONSERP* interaction remains significant when $HORIZON = HORIZON^{DET}$. Associations are marginally significant (at the 10% level) when $HORIZON = HORIZON^0$, and absolute abnormal accruals are used as the dependent variable. When $HORIZON = HORIZON^0$, but the dependent variable is the signed value of abnormal accruals, the coefficient on the *HORIZON*BONSERP* interaction becomes significant when the Jones model is used and remains marginally significant in all other alternative models.

5. CONCLUSIONS

The study looks at a previously unexplored dimension of the relationship between the horizon problem and accounting discretion. Prior evidence in this area is scarce and mixed, with most studies finding no or little association between the two variables (among others, Murphy and Zimmerman, 1993; Wells, 2002; Cheng, 2004). However, no prior research considers that CEOs that approach retirement are heterogeneous with respect to their income increasing incentives. An increase in accounting earnings is particularly beneficial for CEOs whose supplemental pension plans are performance-contingent, as not only their bonus compensation will increase, but also the value of the pension plan. Since pensions are usually determined in the last few years prior to retirement (determination years), the beneficial impact of accounting

earnings on compensation is especially pronounced when such CEOs approach retirement (the horizon problem). As such, a researcher may conclude that no association between the horizon problem and accounting choices exists *in general*, when in fact such association does exist for one group of CEOs and does not exist for the other. The findings in this study confirm that the nature of CEO's retirement arrangements affects the relationship between the horizon problem and accounting discretion. Consistently with most of the prior literature, I find no association between the horizon problem and accounting discretion *in general*, i.e., when CEO's retirement arrangements are ignored. However, the uniformity of this picture changes when CEO SERP benefits are introduced as a moderating factor. I find that income increasing decisions are associated with the horizon problem when CEO SERP benefits are contingent on firm's performance. This new result makes a fruitful contribution to several streams of academic literature: effects of the horizon problem, accounting discretion incentives, and the role of executive compensation.

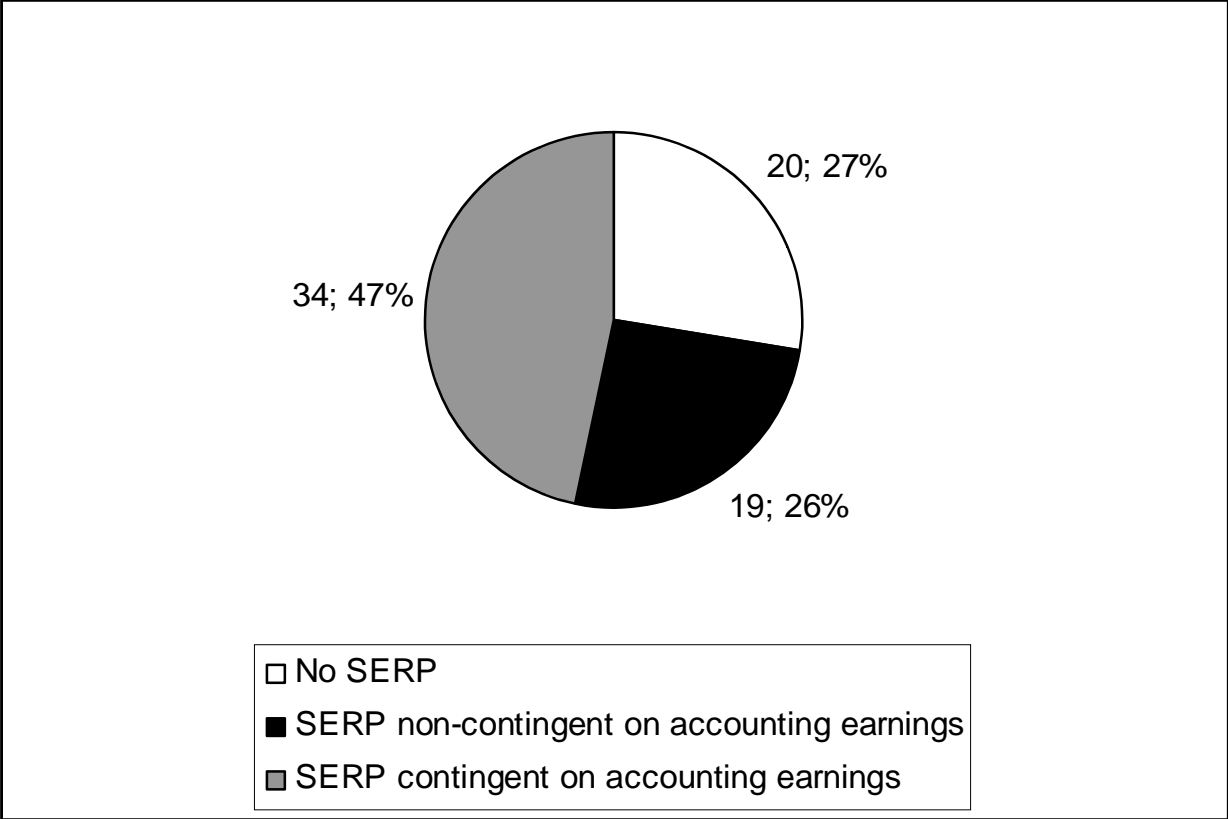
REFERENCES

- Abodiy, D., and R. Kasznik (2000). CEO stock option awards and the timing of corporate voluntary disclosures. *Journal of Accounting and Economics* 29, 73-100.
- Barker, V., and G. Mueller (2002). CEO characteristics and firm R&D spending. *Management Science* 48, 782-801.
- Bartov, E., and P. Mohanram (2004). Private information, earnings manipulations, and executive stock-option exercises. *Accounting Review* 79, 889-920.
- Becker, C., M. DeFond, J. Jiambalvo, and K. Subramanyam (1998). The effect of audit quality on earnings management. *Contemporary Accounting Research* 15, 1-24.
- Butler, M., A. Leone and M. Willenborg (2004). An empirical analysis of auditor reporting and its association with abnormal accruals. *Journal of Accounting and Economics* 37, 139-165.
- Butler, S., and H. Newman (1989). Agency control mechanism effectiveness and decision making in an executive's final year with a firm. *Journal of Institutional and Theoretical Economics* 145, 451-464.
- Cheng, S. (2004). R&D expenditures and CEO compensation. *The Accounting Review* 79, 305-328.
- Chung, H., and S. Kallapur (2003). Client importance, non-audit services, and abnormal accruals. *The Accounting Review* 78, 931-955.
- DeAngelo, L. (1988). Managerial competition, information costs, and corporate governance, the use of accounting performance measures in proxy contests. *Journal of Accounting and Economics* 10, 3-36.
- Dechow, P., and R. Sloan (1991). Executive incentives and the horizon problem: An empirical investigation, *Journal of Accounting and Economics* 14, 51-89.
- Dechow, P., R. Sloan, and R. Sweeney (1995). Detecting earnings management. *The Accounting Review* 70, 193-225.
- DeFond, M., and J. Jiambalvo (1994). Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics* 17, 145-176.
- Frankel, R., M. Johnson, and K. Nelson (2002). The relationship between audit fees for nonaudit services and earnings quality. *The Accounting Review* 77 (Supplement), 71-105.
- Gaver, J., K. Gaver, and J. Austin (1995). Additional evidence on bonus plans and income management. *Journal of Accounting and Economics* 19, 3-28.

- Gibbons, R., and K. Murphy (1992). Does executive compensation affect investment? *Journal of Applied Corporate Finance* 5, 99-109.
- Guidry, F., A. Leone, and S. Rock (1999). Earnings-based bonus plans and earnings management by business unit managers. *Journal of Accounting and Economics* 26, 113-142.
- Healy, P. (1985). The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics* 7, 85-107.
- Holthausen, R., D. Larcker, and R. Sloan (1995). Annual bonus schemes and the manipulation of earnings. *Journal of Accounting and Economics* 19, 29-74.
- Hribar, P., and D. Collins (2002). Errors in estimating accruals: Implications for empirical research. *Journal of Accounting Research* 40, 105-134.
- Jones, J. (1991). Earnings management during import relief investigations, *Journal of Accounting Research* 29, 193-228.
- Kalyta, P., and M. Magnan (2007). "Stealth" compensation and the extraction of rents: Examination of Supplemental Executive Pensions. Working paper, Concordia University, Montreal, Canada.
- Kim, J., R. Chung, and M. Firth (2003). Auditor conservatism, asymmetric monitoring, and earnings management. *Contemporary Accounting Research* 20, 441-464.
- Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics* 22, 375-400.
- Lundstrum, L. (2002). Corporate investment myopia: A horserace of the theories. *Journal of Corporate Finance: Contracting, Governance, and Organization* 8, 353-371.
- McNichols, M., and P. Wilson (1988). Evidence of earnings management from the provision for bad debts. *Journal of Accounting Research* 26 (supplement), 1-31.
- Menon, K., and D. Williams (2004). Former audit partners and abnormal accruals. *The Accounting Review* 79, 1095-1118.
- Murphy, K. (2001). Performance standards in incentive contracts. *Journal of Accounting and Economics* 30, 245-278.
- Murphy, K., and J. Zimmerman (1993). Financial performance surrounding CEO turnover. *Journal of Accounting and Economics* 16, 273-315.

- Pourciau, S. (1993). Earnings management and nonroutine executive changes. *Journal of Accounting and Economics* 16, 317-336.
- Smith, C., and R. Watts (1982). Incentive and tax effects of executive compensation plans. *Australian Journal of Management* 7, 139-157.
- Sundaram, R., and D. Yermack (2007). Pay me later: Inside debt and its role in managerial compensation. *Journal of Finance* (forthcoming).
- Vancil, R. (1987). *Passing the baton: Managing the process of CEO succession*. Boston, MA: Harvard Business School Press.
- Watts, R., and J. Zimmerman (1986). *Positive accounting theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Wells, P. (2002). Earnings management surrounding CEO changes. *Accounting and Finance* 42, 169-193.
- Yermack, D. (1997). Good timing: CEO stock option awards and company news announcements. *Journal of Finance* 52, 449-476.

FIGURE 1: Pension Arrangements of Retiring CEOs



The figure displays the distribution of pension arrangements of CEOs of S&P TSX60 companies who retired between 1997 and 2003.

TABLE 1: Subsamples According to Discretionary IncentivesPanel A: $HORIZON = HORIZON^{DET}$

Variable	Mean	Standard Deviation	Median
Observations which hypothesized income increasing discretion (n=99)			
<i>ASSETS (millions)</i>	58136	84704	11778
<i>LEV</i>	0.309	0.187	0.243
<i>REV (millions)</i>	10146	7976	6243
<i>PERF</i>	0.009	0.144	0.020
<i>CFO (millions)</i>	408	2903	706
<i>DACC</i>	0.004	0.152	0.006
<i>DACC^{ABS}</i>	0.065	0.145	0.037
Other observations (n=296)			
<i>ASSETS (millions)</i>	29981	69696	7090
<i>LEV</i>	0.351	0.241	0.323
<i>REV (millions)</i>	6535 ***	6747	4084
<i>PERF</i>	0.014	0.112	0.028
<i>CFO (millions)</i>	532	2298	502
<i>DACC</i>	-0.001 ***	0.112	0.002
<i>DACC^{ABS}</i>	0.030 ***	0.099	0.016

Panel B: $HORIZON = HORIZON^0$

Variable	Mean	Standard Deviation	Median
Observations which hypothesized income increasing discretion (n=32)			
<i>ASSETS (millions)</i>	49484	108025	11868
<i>LEV</i>	0.331	0.222	0.288
<i>REV (millions)</i>	10034	8869	6110
<i>PERF</i>	-0.022	0.314	0.024
<i>CFO (millions)</i>	845	4177	573
<i>DACC</i>	0.002	0.333	0.017
<i>DACC^{ABS}</i>	0.045	0.326	0.024
Other observations (n=363)			
<i>ASSETS (millions)</i>	35936	76667	8648
<i>LEV</i>	0.341	0.231	0.309
<i>REV (millions)</i>	7207 **	7138	4397
<i>PERF</i>	0.016	0.102	0.027
<i>CFO (millions)</i>	469	2391	520
<i>DACC</i>	<0.000	0.102	0.012
<i>DACC^{ABS}</i>	0.038	0.091	0.024

*** Significant at the 1% level; ** Significant at the 5% level

The table reports descriptive statistics for observations with and without hypothesized earnings management drawn from the sample of TSX/S&P60 firms for the 1999-2003 period. Significance levels are for two-tailed t-tests for differences in means between observations with and without hypothesized earnings management. Monetary values are in 2003 dollars. *ASSETS* is total assets. *LEV* is the ratio of debt to total assets. *REV* is total sales. *PERF* is the return on assets. *CFO* is cash-flows from operations. *DACC* is abnormal accruals generated by the modified Jones model. *DACC^{ABS}* is the absolute value of *DACC*,

TABLE 2: Regression on Signed and Absolute Abnormal AccrualsPanel A: $HORIZON = HORIZON^{DET}$

Variable	Dependent = $DACC$	Dependent = $DACC^{ABS}$
$HORIZON*BONSERP$	0.0090 ***	0.0513 **
$SIZE$	-0.0098 ***	-0.0084
LEV	0.0314 **	-0.0557 **
$GROWTH$	0.0041 ***	-0.0196
$PERF$	1.0038 ***	-0.7722 ***
$LCFO$	-0.2945 ***	0.2967 ***
Adjusted R^2	0.346	0.218

Panel B: $HORIZON = HORIZON^0$

Variable	Dependent = $DACC$	Dependent = $DACC^{ABS}$
$HORIZON*BONSERP$	0.0067 *	0.0188 *
$SIZE$	-0.0079 ***	-0.0580
LEV	0.0303 **	-0.0487 **
$GROWTH$	0.0034 ***	-0.0264
$PERF$	1.0052 ***	-0.7643 ***
$LCFO$	-0.2922 ***	0.2985 ***
Adjusted R^2	0.345	0.215

*** Significant at the 1% level; ** Significant at the 5% level; * Significant at the 10% level

The table displays parameter estimates of the determinants of abnormal accruals for the sample of TSX/S&P60 firms for the 1999-2003 period. Models are estimated using OLS with robust Huber-White standard errors. Dependent variables are signed ($DACC$) and unsigned ($DACC^{ABS}$) abnormal accruals. $HORIZON^{DET}$ is a dummy variable equal to one if the year is a determination year, $HORIZON^0$ is a dummy variable equal to one if a year is a last year prior to CEO's retirement, $BONSERP$ is a dummy variable equal to one if CEO's SERP is performance-contingent, $SIZE$ is the natural log of total assets, LEV is the ratio of debt to total assets, $GROWTH$ is the book-market ratio, $PERF$ is the return on assets, $LCFO$ is the natural log of cash-flows from operations. Significance levels are for two-tailed t-tests. To mitigate any influence from outliers all variables are winsorized at the 1% level.