

CHAPTER 10

EXECUTIVE COMPENSATION

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LEARNING OBJECTIVES AND SUGGESTED TEACHING APPROACHES**1. To Establish the Desirability of Incentive Contracts**

When people are exposed to agency theory for the first time, a common reaction is to reject it because they feel that, almost by definition, managers do not need incentives to want to work hard. I counter this argument by asking the class whether they would work hard in this course if I was to cancel the final exam. However, in a multi-period context, the reaction has to be taken seriously. Fama (1980) must have had a similar reaction, and his argument that market value and reputation considerations will eliminate the shirking problem is worth outlining.

Fama's argument can be questioned, however, from both theoretical and empirical perspectives. In an undergraduate course, I do not pursue the theoretical issues; but the empirical perspective is worth developing. The first empirical evidence that reputation effects do not fully eliminate moral hazard (other than casual observation that all large firms do have incentive contracts) of which I am aware is the paper by Wolfson (1985). Relevant parts of this paper are described in the text. However, I usually assign the first part of the paper itself as supplemental reading and work through selected parts of it in class, since the argument is tortuous. Pages 101-117 of the article, incl., and the text discussion in Section 10.2 are sufficient for the point to be made that Wolfson's results suggest that reputation effects do not completely overcome moral hazard.

I have added a second reference (Bushman, Engel, and Smith (2006)) for anyone who wishes to pursue this topic further.

2. To Flesh Out Implications of Agency Theory for Executive Compensation

Executive compensation of financial institutions has come under considerable criticism following the 2007-2008 market meltdowns. Financial institutions are responding with some compensation changes, as illustrated by the outline of the Royal Bank of Canada (RBC) Executive compensation plan in Section 10.3. Suggested points to discuss are:

(i) As predicted by Holmström (1979), the RBC is complex. Of course, part of this complexity arises because of the multi-period nature of real compensation plans, whereas Holmström's agency model spans a single period. Nevertheless, the mixture of performance measures is consistent with Holmström's prediction.

(ii) Managers bear risk. This is the other side of the coin from the incentive effects of giving the manager a share of the payoff. The manager must bear risk so that working hard is credible to the principle *ex ante*. Thus, there are minimum stock ownership guidelines. For example, the CEO should hold stock with a value of 8 times salary. Also, the long-term incentives plan awards stock options. However, the amount of risk is controlled by filtering annual performance awards through the Compensation Committee of the Board, and by positioning total compensation at the median of a peer group of companies. Also, the use of stock options may help control downside compensation risk.

(iii) Discussion of the RBC plan, and the proposed changes, could usefully proceed in conjunction with discussion of the incentive characteristics of stock options, which have been singled out as one of the reasons for opportunistic manager behaviour such as that of Enron, and of financial institutions leading up to the 2007-2008 market meltdowns. Note, in particular, the long term of the ESOs and the relatively slow rate of vesting. Are these restrictions enough to deter excessive risk taking? In this regard, see Theory in Practice 10.1.

3. To Understand the Qualities Needed by a Good Performance Measure

The basic qualities needed are precision and sensitivity. Sensitivity is the rate of change of the performance measure with respect to effort—the more sensitive the measure, the greater the shift. Precision is the reciprocal of the variance of the density function—the more precise the measure the less likely it is that random state realization will generate a performance result greater or less than expected given the manager's effort. Questions 13 and 19 of Chapter 9 illustrate sensitivity and precision for a 2-point earnings distribution.

Instructors may wish to consider the analogy with relevance and reliability, although the two sets of concepts are quite different. Nevertheless, the need to trade-off is common to both, when net income is a biased predictor of the payoff. When net income is an unbiased predictor, the expected value of net income remains equal to the payoff, but better reporting can still increase precision (Example 9.3).

4. To Evaluate the Role of Net Income in Compensation Plans in Relation to Stock-Based Performance Measures

The class readily sees the short-run decision horizon that may be induced by basing manager compensation on the current year's reported income, and the longer-run horizon hopefully encouraged by stock-based compensation. Also, share price is more timely in capturing all the effects of current manager effort, such as R&D. Thus, stock-based performance measures are more sensitive than net income. However, the class also sees that stock-based compensation may be more volatile than compensation based on reported net income. That is, it is less precise since it is affected by economy-wide events that may have low informativeness about manager effort. It is worth emphasizing that excess volatility can reduce contracting efficiency – for a risk averse manager, greater volatility of the performance measure will require higher average pay to maintain reservation utility, and will discourage the taking of risky projects. However, too little risk discourages effort. The key is to find a good balance between too much and too little risk imposed on the manager.

The foregoing suggests that net income competes with stock price as a variable in compensation plans. I then suggest that *both* net income and share price (and possibly additional performance measures, such as attainment of personal goals) are desirable components of the plan, consistent with Holmström's (1979) analysis. Also, I bring out that we can think of manager effort as a two-dimensional variable – call it long-run effort and short-run effort – and that the relative attention that the manager gives to each dimension can be controlled by the proportion of current net income-based and stock-based compensation in the compensation plan. This argument is based on the analysis in Bushman and Indjejikian (1993).

Instructors who wish to develop further the concept of multi-dimensional effort can discuss the concept of non-congruency of a performance measure explained in optional Section 10.4.2. However, this section can be ignored with little loss of continuity.

Having established that there is a role for net income in compensation plans, I then ask whether the measure of income should be historical cost-based, or current value-based as per the measurement perspective of Chapters 6 and 7. I argue that historical cost-based accounting has greater precision, due to the random factors that can affect fair value-based income but which are low in informativeness about manager effort (e.g., changes in market prices).

This contracting role for net income is a possible reason why historical cost-based accounting has such "staying power" in the mixed measurement model, and raises the question of whether historical cost-based or current value-based income measures are preferable in compensation plans.

5. To Introduce Empirical Evidence on the Role of Net Income in Compensation Plans

The predictive ability of the theory of executive compensation needs to be tested empirically. Beginning with the 1987 paper by Lambert and Larcker, the empirical research supports the compensation theory, much like the empirical research concerning investor reaction to accounting information supports the rational investor and market efficiency theory.

6. To Evaluate Political Aspects of Executive Compensation

Executive compensation has attracted a lot of media and public attention, often focusing on the question of whether North American managers are overpaid, particularly in relation to their counterparts in other regions. This question is an excellent one with which to motivate student interest in the theory. Problems 4, 12, 14, 15, 17, 18, and 19 deal with various aspects of possible executive over-compensation.

I also remind the class of the problems of measuring the stock options component of executive compensation that were discussed in Section 8.6. These problems arise in large part because the Black/Scholes formula assumes that options are held to maturity whereas ESOs may be exercised after vesting but prior to maturity. This tends to lower the ESOs' fair values relative to Black/Scholes. Recall that, to compensate for this, accounting standards suggest using the expected time to exercise in Black/Scholes. Also, it should be noted that since managers are, in effect, forced to hold their ESOs from the grant date to vesting, this further reduces the ESO value to the manager since in general, fair value assumes that assets and liabilities can be readily sold if desired. The paper by Hall and Murphy (2002) brings out the decline in the value of an option to a risk-averse manager, relative to its Black-Scholes value, as the manager's ability to sell the option is restricted. Theory and Practice 10.5 and Problem 13 re Zion's Bancorporation illustrate this effect. The main point I make as a result of these considerations is that the value of ESOs to the manager is likely considerably less than the amounts one sees in the media, which typically take the number of options exercised times share market value as their measure of the options compensation.

7. The Power Theory of Executive Compensation

I suggest using this section to bring out the point that just as rational investment and efficient markets face competing theories, so does the theory of executive compensation. The power theory argues that managers use their influence in their organizations to receive more than reservation utility, implying low efficiency of managerial labour markets and increasing the scope for financial reporting of manager compensation. Discussing the parallelism here, I hope, helps the students to better understand both theories of reporting to investors and theories of manager compensation.

SUGGESTED SOLUTIONS TO QUESTIONS AND PROBLEMS

1. a. The 10% bonus plan is designed to overcome the moral hazard problem which arises because the shareholders cannot observe management's effort in operating the firm. If they received a straight salary, managers may be tempted to shirk. By giving managers a share in profits (which are informative about effort and payoff), their tendency to shirk is reduced.

The lack of a cap could encourage the manager to undertake risky projects, since if these projects pay off the manager will receive high compensation. However, if they do not pay off, the lowest compensation the manager receives is zero (this assumes a bogey-- the manager does not have to pay the firm 10% of any losses). If shareholders are diversified, a reasonable level of firm risk may be in their best interests. However, if excessively risky projects are undertaken, the probability of financial distress, such as debt covenant violation or bankruptcy, is increased. This may not be in shareholders' best interests since it is they that suffer any resulting losses.

Since income tax expense may not be very informative about manager effort, Miracle-J Corp. must feel there is no need to deduct income tax in arriving at profits subject to bonus. A performance measure should be as informative as possible about manager effort. Evidently, Miracle-J Corp. believes that before-tax profit is such a measure. Note, however, that this will reduce management effort devoted to minimizing taxes.

- b. Reasons for the Employee Stock Option Plan:
- To strengthen employees', including senior managements', incentive (in addition to the bonus plan) to work hard on the firm's behalf. Since the value of stock options depends on share price performance, this component of compensation is consistent with the analysis of Hölmstrom (1979), which shows that more than one performance measure can increase contracting efficiency.

- The plan may be intended to give senior management a longer-run perspective in operating the firm. As demonstrated by Bushman and Indjejikian (1993), the length of the manager's decision horizon can be controlled by the relative proportions of short- and long-term incentives. Also, this gives the firm's compensation committee some flexibility to change the decision horizon. For example, if short-term profit goals are not being met, the proportion of compensation based on profits can be increased.
- To motivate a broader segment of the firm's workforce – the plan applies to employees in general, not just officers. The firm may feel that a bonus plan for all employees may require too much cash. Effort motivation can be achieved, without direct expenditure of cash, by issuing ESOs. There is an opportunity cost of issuing ESOs, however, This cost shows up as dilution of the equity of existing shareholders, since shares issued under ESOs are issued for less than market value. Also, substituting ESOs for bonus may change the employees' decision horizon.

Note: While the ESO plan may encourage employee cooperation, it may instead lead some employees to “free-ride” on the efforts of others. Also, it could lower employee morale if share price, hence ESO value, falls or does not increase. Since lower level employees have little or no say on strategic decisions, they may feel that a poorly performing share price is not their fault. (Of course, under a bonus plan, they may feel the same way if net income falls.)

- c. To a considerable extent. Due to contract incompleteness and rigidity, accounting policies and changes in GAAP that affect reported net income would have economic consequences for management. For example, bonus awards will be affected, either in terms of expected value or volatility, or both. Also, changes in GAAP can affect the likelihood of debt covenant violation, which could incur costs

by constraining the firm's operations. Consequently, management is likely to look closely at accounting policies and any changes in these policies induced by changes in GAAP.

Also, to the extent it does not accept full securities market efficiency, management may feel that accounting policies and GAAP changes that lower reported net income may cause share price to fall, thereby lowering the value of stock-based compensation such as ESOs.

2. Note: Instructors who assign this problem may wish to refer students to Chapter 7, Note 22, which points out that risk goes both ways. That is, the relevant ex ante compensation risk measure for a manager who trades-off risk and return is a measure of the dispersion of compensation, such as its standard deviation. Students have a tendency to think primarily of controlling downside risk in this question. While valid, this view of risk is more of an ex post concept than an ex ante one. That is, following state realization, the manager may react negatively to reduced compensation if the realization is unfavourable, but would be unlikely to react this way if the realization is favourable. Before state realization, however, a "2-sided" concept of risk is appropriate. The suggested answers below use both ex ante and ex post views of compensation risk.

a. Reasons why it is important to control or reduce the risk imposed on managers:

- Since managers are likely to be risk averse, they will trade-off risk against expected returns ex ante, and will demand an increase in the expected level of their compensation as risk increases so as to maintain their reservation level of utility. This will increase the firm's average compensation cost.
- Excessive ex ante risk may cause managers to undertake only safe (that is, less risky) projects. Shareholders' interests may be better

served by riskier projects since shareholders can diversify away firm-specific risk.

- Excessive risk may cause the manager to engage in extensive hedging activities. This is costly to the firm and could possibly lead to the use of derivatives for speculation rather than risk management.

b. Different ways of reducing risk are:

- The bogey and cap in a bonus plan reduce risk ex ante, because they impose bounds on the manager's bonus.
- Existence of stock options in the compensation package reduces downside risk. If the stock price rises the manager stands to gain but the lowest an ESO can be worth is zero.

Note: If stock price falls substantially, and for an extended period, the exercise price of managers' stock options may be lowered by the compensation committee of the Board. This possibility further lowers managers' risk, but has incentive connotations. See Problems 14 and 15.

- Use of relative performance evaluation reduces risk because the common risk faced by all firms in the comparison group is filtered out. Thus a manager may receive a bonus or stock-based award even if reported results are poor if they are not as poor as the industry average.
- Existence of a compensation committee to monitor managerial compensation reduces risk because this committee is likely to consider exceptional or unexpected circumstances in its deliberations. The committee may award a bonus even when firm performance is poor if it feels the manager is deserving. However, compensation committees are often criticized for awarding bonuses when the manager is not deserving.

- Earnings management, that is, the ability to choose from a set of accounting policies, reduces risk both ex ante and ex post. Earnings management helps managers to reduce the effect of unforeseen state realizations on reported net income. However, the manager may abuse earnings management to cover up shirking, thereby receiving an undeserved bonus.
- Golden handshakes. These provide severance payments to managers who leave the firm. These reduce risk for the manager since it is possible that the firm be taken over or may enter financial distress, despite the manager's best efforts. Such events frequently result in the termination of the current manager.

If too much compensation risk is eliminated, the manager may shirk. Agency theory tells us that if effort is to be motivated the manager must bear some risk. An efficient contract imposes an optimal amount of risk, not minimal risk.

c. Such requirements are imposed so that managers do not reduce their risk by selling off their firms' shares (which are subject to firm-specific risk) and buying diversified portfolios (with little or no firm-specific risk) from the proceeds of the sale. Requiring managers to bear compensation risk maintains their incentive to exert effort, thereby controlling moral hazard.

However, forcing the manager to hold company stock increases the manager's compensation risk. The riskier the compensation, the higher must be the *expected* compensation if the manager's reservation utility is to be maintained, resulting in higher average compensation cost over time for the firm. Also, excessive risk may encourage dysfunctional manager behaviour such as avoidance of risky projects (when these would benefit diversified investors) and excessive hedging.

d. Basing managerial compensation solely on share performance may impose excessive risk on the manager because:

- Share price tends to be low in precision. Unless offset by higher sensitivity, the resulting increase in ex ante risk may require higher expected compensation to maintain reservation utility.
 - Hölmstrom (1979) shows that more than one performance measure can increase contracting efficiency. This supports the inclusion of net income as a performance measure in addition to share return.
 - Bushman and Indjejikian (1993) show that including both share price-based and net income-based components in the compensation package can control the length of the manager's decision horizon. In some cases, for example if the firm needs to quickly reduce its costs, the firm may wish to shorten the manager's decision horizon. It can do this by increasing the relative proportion of net income-based compensation since net income will respond quickly to reduced costs.
3. No, you should not agree. While cash is received, the amount is less than the market value of the underlying shares. Consequently, the firm will suffer an opportunity loss of the difference between exercise price and underlying share market value. Failure to record this expected opportunity loss understates compensation expense and possibly leads to excessive use of options as a compensation device.
4. The reason why the values of ESOs and restricted stock to a manager are less than their fair values is that compensation plans generally restrict the manager's ability to diversify or eliminate risk by selling them. Since managers are assumed risk averse, forcing them to hold these risky assets reduces their worth (utility) to the manager to less than fair value, since fair value based on Black/Scholes and stock market value assumes unrestricted buying and selling.
5. A low pay/performance relationship is expected for large corporations for the following reasons:

- Too much downside risk on a manager reduces compensation contract efficiency since downside risk may induce dysfunctional behaviour such as excessive avoidance of risky projects and excessive hedging. Downside risk is reduced by a bogey in the compensation contract, which eliminates the possibility of the manager paying the firm if losses are incurred. But not requiring the manager to pay the firm if losses are incurred reduces the pay/performance relationship.
 - Many compensation plans impose a cap on compensation.
 - For large companies, the amount of increase in value over a year can be extremely large. Unless compensation is a very small proportion of this value increase, it would be excessive, even for a manager.
 - To the extent that special items are excluded in determining amounts of compensation awards, a low pay/performance relationship is generated, since these items then affect net income but not compensation.
 - Managers often receive large amounts of compensation upon leaving the firm (golden parachutes) even if the reason for leaving is poor performance.
 - To the extent the power theory of executive compensation is operative, managers use their power in the organization to attain excessive compensation, unrelated to changes in firm value. This reduces the pay/performance relationship both when compensation is not reduced following poor performance and when a compensation increase exceeds any increase in performance.
6. Firm A's compensation plan suggests that the precision of net income is high, with reasonable sensitivity of effort relative to the sensitivity of share price. An example of an A-type firm is one with the volatility of net income low relative to the volatility of share price (e.g., low financial and operating leverage), low and stable R&D costs, and a short-term decision horizon. Then, it is more efficient for Firm A to base a high proportion of compensation on net income.

For Firm B, its compensation plan suggests that the sensitivity of effort relative to share price is high, with reasonable precision relative to the sensitivity of net income. An example of such a firm is one with the volatility of net income high relative to the volatility of share price (e.g., high financial and operating leverage), with high and volatile R&D costs, and a longer-term decision horizon. Then, it is more efficient to base a high proportion of compensation on share price.

Note that manager compensation is not completely based on net income or share price, however. This would give the managers an excessively short-run or long-run horizon, respectively, in operating the firm.

Note: The question implicitly assumes that both firms' earnings quality is similar.

7. The reason derives from the Holmström demonstration (Section 9.6.1) that more than one performance measure can increase compensation contract efficiency.

The reason for greater weight placed on non-financial measures relative to earnings-based measures for lower-level executives is that it becomes progressively more difficult to assign responsibility for corporate performance to lower level employees, due to the jointness of their efforts. This jointness reduces the sensitivity of both net income and share price-based performance measures for these employees. In effect, informativeness of corporate performance with respect to effort and payoff becomes lower as employees are farther down in the organization.

Furthermore, the motivation of corporate performance measures becomes lower for lower-level employees since they perceive a less direct connection between their effort and corporate performance. While basing compensation on corporate performance may increase cooperation between lower level employees, it also creates a temptation to "free ride" on the efforts of others. Then, compensating such employees on the basis of corporate performance reduces contract efficiency. Consequently, lower level employees should be compensated more on their individual performance and less on corporate performance.

Note: This argument assumes that individual performance measures can be measured with reasonable precision.

8. The reason for requiring executives to hold company shares is to further align their interests with those of shareholders. Also, executives would be motivated to maintain a longer-run decision horizon.

Note: Executives of financial institutions leading up to the 2007-2008 market meltdowns presumably held large amounts of company shares. Yet, executives of these firms did not seem to have a longer-run decision horizon. Possibly, other compensation components, such as bonuses and ESOs, motivated sufficiently short decision horizons as to overcome the effects of share holdings.

Requiring stock holdings post-retirement is due to a concern that as executives approach retirement, their decision horizons shorten. If so, they may opportunistically manage earnings upwards, and/or take actions to increase earnings in the short run (e.g., reduce advertising, R&D, repairs and maintenance), so as to collect high cash bonuses. However, these actions may lower firm profits and share price in the longer term. Requiring executives to hold shares after retirement reduces this concern.

Note: This argument can be related to maintenance of trust in the final period of the multi-period trust-based game illustrated in Section 8.10.3 (optional reading).

9. Reasons why TD would voluntarily expense its ESOs:
 - To show a commitment to transparency, and high quality reported net income. This could lower its cost of capital by decreasing investors' estimation risk.
 - TD may not have been a heavy user of ESOs. If so, the impact of expensing on net income would be moderate, at least relative to its 2003 net income of \$1.076 billion.

- TD may have been planning to reduce its use of ESOs in view of the apparent adverse incentive effects (i.e., pump and dump, late timing) of ESOs and the resulting bad publicity surrounding their use.
 - TD may have been expecting a period of high earnings, so that net income could “stand” the charge without creating problems with debt covenants.
 - TD may have accepted securities market efficiency, in which case it would realize that moving ESO cost from the notes to the financial statements proper would have no direct effect on share price.
 - TD, being a large Canadian firm, may have been concerned about the political costs of high net income of \$1.076 billion, and wanted to minimize current reported net income to avoid charges of excessive profitability.
 - TD may have realized that a new standard requiring ESO expensing was imminent, so it might as well start now.
10. a. If securities markets are efficient, Microsoft's share price would be unaffected by the reduction in earnings since the switch generates little effect on the firm's cash flows.

Reasons why Microsoft's stock price may fall include:

- The restricted stock has an exercise price of zero, unlike ESOs. The market may react to the reduced ESO cash flow to Microsoft, even though the amount was small.
- If security markets are not fully efficient, the market may not properly interpret the reduction in reported net income.
- Microsoft is a heavy user of stock compensation, based on the material amount of its stock-based compensation expense. Materially lower reported net income may increase the probability of debt covenant violation. The market would react adversely to this possibility.

- Investors may interpret Microsoft's switch to restricted stock as an indication that the firm did not expect its share price to rise to the ESO exercise price for some time.
- b. Reasons why Microsoft's share price might rise:
- Lower net income may reduce political pressure resulting from excessively high earnings.
 - Switching voluntarily to a type of compensation that requires expensing may be a signal of inside information that Microsoft expects high future earnings.
 - Before share-based compensation expense, Microsoft's 2003 earnings of \$3.72 billion exceeded analysts' estimates of \$3.28 billion.
 - Investors may expect that eliminating the under water ESOs and replacing them with shares would improve employee motivation, effort, and retention.
- c. Microsoft may have wanted to remove market concerns about pump and dump, and other types of dysfunctional manager behaviour as documented by Aboody and Kasznik (2000) and Yermack (1997) (see Section 8.6). To the extent the market was concerned about such behaviour, share prices of all heavy ESO users would be affected. Since restricted stock is less subject to manager dysfunctional behaviour to maximize ESO value, switching to restricted stock with a 5-year vesting period would reduce market concerns about estimation risk, thereby lowering cost of capital.

Microsoft may have anticipated the late timing ESO scandals (Section 8.6). Even if it did not engage in late timing itself, it could distance itself from the adverse publicity surrounding late timing by discontinuing its ESO plan.

Furthermore, it may have become apparent to these firms that ESOs were not as efficient a compensation device as originally thought. To the extent they induced short-run dysfunctional behaviour, they had the opposite effect than intended. Restricted stock with a 5-year vesting period may be viewed as a more efficient compensation device to induce a longer-term employee horizon.

11. a. The GE compensation plan seems likely to induce a balance of longer-run effort, for the following reasons:
- The 5-year period before the cash flow and share price targets pay off. This encourages longer run effort since there will be time for longer-term projects to pay off. Projects that have a short-run payoff but which may depress company performance in the longer run (e.g., excessive cost-cutting) will be discouraged.
 - The share component of the compensation package. GE's compensation package contains a large share component—the 125,000 share units based on beating the S&P 500 index, and the requirement to hold 6 times salary in company shares.

Basing compensation on share price performance encourages longer-run effort, since an efficient market will see through effort that may depress earnings in the short run (e.g., R&D), and will bid up share price by the amount of the expected longer-term benefits. The plan does encourage some short-term effort, through the annual salary and bonus components. However, these are relatively small compared to the longer-term components. Even if the S&P 500 index and GE's current \$30 share price stay flat over the next 5 years, meeting both 5-year targets will yield $(250,000 \times 30)$ \$7,500,000. To the extent share price increases over 2003-2008, this amount is even greater.

- b. Dysfunctional effects of too much compensation risk include:

- Adoption of only safe operating policies, offering low expected returns. These may not be in the best interests of diversified investors.
- Excessive hedging to reduce firm-specific risk, when shareholders may be able to do this at less cost through diversification.
- Higher average compensation to manager to compensate for the excessive risk, otherwise manager may leave if reservation utility not attained.

c. Operating cash flows have lower precision than net income since they are lumpy, and thus more subject to random events that are not informative about effort and future payoffs. For example, a postal strike may delay the receipt of cash until next period, so that cash flow is less informative about effort than net income, which would accrue the amount receivable. Similarly, cash payments may be deferred if the firm runs short of cash, whereas the related expenses would be accrued as accounts payable.

Operating cash flows may also be less sensitive than net income. For example, a manager may work hard this period to attract new customers and secure large new sales. However, receipt of cash is unlikely until next period, thereby lowering its informativeness about current period's effort and the ultimate payoff.

However, net income is more subject to earnings management than cash flow. This lowers sensitivity, since the manager may manage earnings to cover up shirking on effort. Presumably, this is the reason that GE uses cash flow rather than net income in this component of its compensation.

We conclude that operating cash flows are a less precise performance measure than net income. However, it is not clear if they are also less sensitive. This depends on the extent of earnings management.

Eliminating unusual events from the operating cash flow performance measure seems to be a risk-reducing device. Such events are often hard to predict and are large in amount. Eliminating them reduces risk by increasing the precision of the performance measure. Alternatively, eliminating unusual events may be designed to increase sensitivity, since they may not be very informative about manager effort and ultimate payoff.

The effect on manager motivation may be to increase effort, since it may be more difficult to disguise shirking by managing cash flow than by managing net income. However, if all unusual events are removed from a performance measure for compensation purposes, this reduces manager risk. Too little risk will reduce manager effort.

- d. The following points should be considered:
- There may be some incentive to pump up share price prior to the grant date if the number of restricted shares to be granted depends on share price performance.
 - Restrictions on disposal during the vesting period reduce the temptation to pump share price during that period. This is especially so if the vesting period is long—5 years in the case of GE. To the extent restricted stock vests later than ESOs, the temptation to pump, and the ability to dump, are reduced.
 - Once the vesting period of restricted shares has passed, there is an obvious temptation to pump so as to increase share value and/or increase the proceeds of dumping.

We conclude that restricted stock is subject to pump and dump behaviour but to a lesser extent than ESOs.

12. a. The argument for disclosure of compensation information of senior executives is to motivate manager effort and to enable managerial labour markets

to work better. Manager effort is motivated because the executive knows that the disclosures reveal information about the compensation committee's evaluation of the managers' performance and the types and amounts of compensation awarded. The manager also knows that investors will relate this compensation to firm performance. If, due to low effort, performance is poor relative to compensation, the manager's reputation will be damaged and reservation utility for future compensation contracts will be reduced.

The disclosures enable managerial labour markets to work better for the same reason. Given the compensation committee's evaluation of the managers' performance and the types and amounts of compensation awarded, market forces will drive compensation down if compensation appears excessive, and vice versa. These forces will show up, for example, in investors selling their shares if compensation is not reduced and/or raising objections in the media and at shareholders' meetings.

In rejecting this argument, Mr. Lamoureux must feel that the managerial labour market is not fully efficient. For example, he may feel that the power theory of compensation may better describe the labour market's operation. Then, market forces are less powerful, and it is possible for managers to receive more or less compensation than the value of their services warrants. Consequently, more disclosure may simply encourage other managers to seek pay increases to match their higher-paid peers.

b. The answer depends on how well the managerial labour market works. If it works well, RBC's relating of its total compensation to the median of its Peer Group will have no effect on compensation levels in the banking industry. Managers will continue to receive compensation consistent with the value of their services given by all publicly available information, including information in the pay disclosure rules.

However, if managerial labour markets do not work well, possibly because the power theory is operative, managers may receive more compensation than required to meet their reservation utility. As Mr. Lamoureux fears, they may feel that they are entitled to higher compensation than that of the Peer Group median, and may use their power to

convince the compensation committee that higher pay (higher than justified by their market value) is justified. If enough managers feel this way, the level of pay in the banking industry will ratchet upwards over time.

13. a. Reasons for a market-based approach to stock option expense:
- Zions may feel that estimates based on models such as Black/Scholes are unreliable, and may overstate ESO expense. Sources of unreliability include possible bias due to the need to estimate the timing of ESO exercise by its employees, and also due to estimates of parameter inputs needed by models, such as share price volatility.
 - Zions may want to increase reported net income by reducing ESO expense. From an efficient contracting perspective, higher reported net income may reduce the probability of debt covenant violation. From an opportunistic perspective, higher net income may lead to higher manager compensation.
 - If Zions does not completely accept securities market efficiency it may feel that lower ESO expense and resulting higher reported profits may lead to higher share price.
- b. Model-based estimates of ESO value measure the cost to *the company*. This cost derives from dilution of existing shareholders' interest in the firm. This dilution is measured by the opportunity cost arising from issuing new shares at ESO exercise price, which is less than market price of the issued shares. Model-based estimates of ESO value are estimates of this opportunity cost to the company.

However, ESOs have restrictions attached. They cannot be exercised until the exercise date. Then, senior employees cannot diversify the risk of share price changes during the time period up to exercise date, since they cannot work for more than one firm at a time. Consequently, ESOs are worth less to

a risk averse employee than opportunity cost to the firm. For example, Hall and Murphy (2002) estimate that for a moderately risk-averse individual, the value of an ESO to that individual is only about 40% of its Black/Scholes value. By selling securities equivalent to its ESOs to risk averse investors, the market price so established approximates their value to the employee, not their opportunity cost to the company.

- c. No, you do not agree. Since net income, hence stock option expense, should be measured from the perspective of the company, its opportunity cost is the relevant measurement basis.

Note: You may agree if you feel that investors are risk neutral. You may also agree if you feel that the large number of estimates needed to apply Black/Scholes to ESO valuation creates an opportunity for sufficient error and bias by management that the greater reliability of a market-based approach outweighs its lower relevance.

14. a. Reasons for repricing ESOs:

- Senior managers may opportunistically seek to benefit themselves at the expense of existing shareholders by lowering (i.e., repricing) the exercise price of their ESOs. This increases the dilution of exiting shareholder interests. This behaviour is more likely if corporate governance is poor.
- Power theory of executive compensation. CEOs may use their power and influence in the organization to benefit themselves at the expense of existing shareholders. If the CEO is also Board chair, his/her power in the organization is increased.
- Efficient contracting theory. By reducing exercise price, key employees may be induced to stay with the organization if, without repricing, their expected utility of compensation was below its reservation level. Also, even if employee expected utility was still

above reservation level, their motivation to exert effort would be increased if they felt that the current share price was so far below exercise price that it was unlikely their ESOs would ever be in the money.

- Competition for competent employees. To the extent that their expected utility of compensation falls below reservation utility due to zero ESO value, current employees may leave the company, with the most competent the first to leave. This effect is stronger the greater the competition for talent in the industry. Thus, firms in hi-tech, research intensive industries, and financial firms, have strong incentives to reprice.
- Share price volatility, reflecting the underlying riskiness of the firm's environment. The events leading up to repricing, leading to a decline in stock price, suggest the the firm's riskiness may have increased. The potential for a stock option to increase in value is greater the greater is firm risk and resulting share price volatility. Consequently, repricing becomes a more effective effort motivator as firm risk increases.
- Extent to which current options are under water. The higher the excess of exercise price over current share price for currently-outstanding options, the less incentive for employees to work hard to create a share price increase. That is, they may "give up" and/or seek alternative employment. Repricing increases the incentive to work hard to the extent that employees see an increase in option value as more attainable.
- Minimizing total compensation costs. To the extent that ESOs are out of the money because of a decline in the economy, and not because of employee shirking, failure to reprice ESOs loads economy-wide risk

onto employees. Employees will then need additional compensation to compensate them for bearing this risk.

b. Efficient contracting theory, competition for competent employees, and share price volatility all predict the finding of a share price increase. Investors must feel that the expected incentive effects dominate investor concerns about opportunistic repricing, and that future firm performance will improve despite increased dilution and possible effects of poor corporate governance on future share returns.

Yes, the finding supports efficient securities market theory. If the market is not reasonably efficient, share price would not quickly react positively to an event that is predicted to improve future firm performance on balance. This argument is strengthened by the finding that share price increased more when the employee retention and increased incentive reasons are more likely to hold. If markets are not reasonably efficient, share price would not rise, would rise with a lag, or would fall if the repricing was accompanied by negative media reaction.

15. a. The reason seems to be that repricing increased the incentives of executives to work hard relative to the effort incentives of executives of non-repricing firms.
- b. Economic incentives to reprice include:
- Extent of R&D. To the extent firms are in industries such as high tech, that are highly research intensive, competition for competent employees is high. Such firms also tend to include a high proportion of ESOs in compensation. To the extent that under-water ESOs reduce employees' expected compensation utility below reservation level, they may leave the organization. To counter this, the firm may reprice its ESOs.

- ESOs are intended to motivate longer-run managerial effort. Repricing restores, or at least increases, the value of ESOs to managers. This may increase the incentive of managers to exert longer-run effort, which could explain the finding of a 5-year improvement in profitability
- Firm risk. The decline in share price leading up to repricing may indicate an increase in firm risk and resulting increased share price volatility. The greater the firm's share price volatility, the greater the potential for ESOs to increase in value, other things equal. At the same time, the downside risk of ESOs is limited. Thus, the incentive effect of ESOs increases with firm risk, leading to increased economic benefits to the firm from repricing.
- Extent to which ESOs are under water. The more are ESOs out of the money, the greater the negative effects on managers, hence the greater the economic benefits of repricing.

c. Reasons why no additional increase in operating performance was found when repricing extended to all employees:

- Non-executive employees may be too far down in the organization for them to perceive that increased effort on their part will lead to share price increase.
- Other compensation components, such as salary and cash bonuses, are unlikely to increase when the firm is performing poorly. This may put a "brake" on effort motivation that cancels any increase in motivation resulting from repriced ESOs.

16. Note: A general point that underlies these hypotheses is that a good performance measure should be highly informative about the manager's effort in running the firm, and thus in generating investor payoff. This is accomplished through an efficient trade-off between sensitivity and precision.

- a. (i) Noise. By definition, the less noise in net income (e.g., resulting from a low firm risk environment, or higher quality reporting, which produces higher correlation between accounting and market returns) the more precisely net income captures the results of manager effort, other things equal. While individual non-financial measures may also reflect effort precisely, the less noise in net income the greater its efficiency relative to individual performance measures. Given that compensation committees want to maximize contract efficiency, Ittner, Larcker, and Rajan hypothesize that more noisy net income will have less relative weight in the compensation plan.
- (ii) Firm Strategy. The reason for this hypothesis is that, for prospector firms, it may take some time for the results of growth and innovation strategies to show up in net income. Yet to the extent the costs of such strategies, such as R&D, are written off as incurred under GAAP, non-financial performance measures are more sensitive to current manager effort than net income. For defender firms, cost savings and improvements in efficiency can be measured relatively quickly and accurately, and they affect net income with little lag. Consequently, net income is more highly correlated with current manager effort for such firms. Compensation committees of defender firms react by placing more weight on net income.
- (iii) Product quality. Product quality is a characteristic that can be measured quickly and accurately, for example by analyzing defect rates, returns, and warranty costs. Thus it provides a precise non-financial measure of employee effort devoted to quality. However, it may take some time for the effects of high quality products to show up in net income. One reason is that it may take some time for purchasers to realize that quality has improved, while costs of improving product quality are charged to expense as incurred. As a result, net income lags the non-financial performance measures. The greater the firm commitment to quality, the

more it will use non-financial measures of product quality relative to net income as a quality incentive device.

(iv) Regulation. A major reason for regulation is that firms have a monopoly in their product markets. The profits of regulated firms are limited by the regulatory process. This reduces sensitivity of net income as a performance measure. That is, even very high manager effort is constrained in its effect on the bottom line. However, by maintaining customer satisfaction with performance, courtesy, responsiveness, etc., the firm can help to sustain its monopoly position. As a result, non-financial performance measures such as these will be emphasized more strongly than net income in the compensation plans of such firms.

b. Firm strategy. The personal goals included in the RBC plan seem mostly strategic in nature (e.g., development of U.S. operations). Thus RBC seems to regard itself as a prospector type firm. Since these strategies likely take some time to show up in net income, personal goal attainment is a more sensitive performance measure.

To the extent that executives are directly responsible for product quality, courtesy, etc., the product quality hypothesis is also an explanation. Measures of product quality are likely sensitive to manager effort and measurable with reasonable precision, whereas with so many factors affecting net income, earnings may not be a precise measure of product quality performance.

17. a. A company awards ESOs as compensation for the following efficient contracting reasons:
- To lengthen the manager's decision horizon. ESOs, being stock-based compensation, may motivate the manager to increase longer-term effort. Since an efficient stock market will look to the longer term expected payoffs of the manager's actions, the manager's compensation is not penalized for adopting longer-term projects that

may reduce current net income, such as R&D and large capital investments.

- To control the length of the manager's decision horizon. The firm may perceive economic benefits from lengthening this horizon. A high proportion of ESOs in the compensation contract, relative to net income-based compensation, encourages a longer run decision horizon.
- To control the manager's compensation risk. Since ESOs have relatively low downside risk and considerable upside risk, they encourage the manager to adopt risky projects. They also help to offset the downside risk imposed when compensation is based on (conditionally) conservative net income. Conservative net income imposes downside risk because unrealized losses are recognized in net income but unrealized gains are not.
- To reduce cash compensation. Since ESOs do not require cash outlay, they provide effort motivation while conserving cash. This feature is of particular value to new companies, which may be short of cash.
- To reduce compensation expense, enabling the firm to report higher net income. This reason no longer applies since accounting standards now require expensing of ESOs. However, it did apply during the period covered by UnitedHealth's late timing activities.

Note: Some of the above reasons overlap. Also, to the extent that ESOs vest quickly, and managers are free to dispose of shares acquired, ESOs may induce a short decision horizon, resulting in opportunistic actions such as pump and dump, manipulation of share price, and other actions discussed in Section 8.6.

b. Under the power theory, the CEO has sufficient power to influence the Board of Directors and Compensation Committee. He/she uses this power to increase compensation above its reservation utility level. Late timing of ESO awards increases the recipient's expected value of compensation because, in effect, ESOs are awarded in-the-money.

c. From the market model (Section 4.5.1, Equation 4.4), noting that

$\alpha_j = R_f (1 - \beta_j)$, the expected return on UnitedHealth's shares for May 11 was:

$$\text{Expected return} = 0.0001(1 - 0.4000) + 0.4000 \times (-.0122)$$

$$= 0.00006 - .00488$$

$$= -.00482$$

$$\text{Actual return} = -1.80 / (1.80 + 44.37)$$

$$= -1.80 / 46.17$$

$$= -.03899$$

Abnormal return was thus $-.03899 + .00482 = -.03417$, or -3.417%

d. Reasons why UnitedHealth's share price fell on May 11:

- The whole market fell, pulling UnitedHealth shares down with it. However, this contributed to only part of the share price fall.
- Revelation of late timing led the market to realize that the power theory of executive compensation was operating. That is, management was behaving opportunistically. Since this behaviour may well extend to other aspects of UnitedHealth's operations, investors perceived an increase in estimation risk, causing share price to fall.

- The market feared the economic consequences of lower reported profits for 2003-2005. These include possible violation of debt covenants, possible dysfunctional manager actions resulting from corrections of late timing awards, and manager departures.
 - The market anticipated lawsuits and fines against UnitedHealth as a result of the late timing, despite the company's claim that cash flows would not be affected.
 - If markets are not fully efficient, share price could have fallen due to the estimated reductions in reported net income for 2003-2005. Non-rational investors may not realize that these reductions do not directly affect future cash flows.
- e. Under APB 25, an expense had to be recorded for any amounts that ESO awards are in the money, that is, for the intrinsic value of the ESOs (see Section 8.6). This expense was disguised by the late timing. Correction of the late timing results in a retroactive adjustment to record the intrinsic value as compensation expense. This amount is the difference between the *original* exercise price of the ESOs and underlying share value on the *actual* grant date. In HealthSouth's case, the increase in compensation expense would be even higher since the share value was reset to its highest price during the year of award, not the share price on the actual award date.
- f. Late timing increases the likelihood that the ESO will be deep-in-the money. According to the analysis of Huddart (1994), deep-in-the-money ESOs are more likely to be exercised early (Section 8.6). Consequently, the firm may need to shorten its estimate of time to exercise in the Black/Scholes formula.
- g. Other ways to manipulate the value of ESO awards:
- Release BN shortly before the ESO grant date, for scheduled awards. This forces share price down, thus lowering ESO exercise price (see Section 8.6).

- Manipulate the award date, for non-scheduled ESO awards, particularly if the power theory applies. The date may be manipulated to just before GN is released (spring loading--see Section 8.6).
 - Pump and dump. When exercise date arrives, pump up share price to increase ESO value. Exercise the ESOs and then sell the shares acquired before their market price falls post-pumping.
 - Manipulate the share price variability input into the Black/Scholes formula. Lower variability produces a lower estimate of ESO fair value (see Section 7.9.1). Lower fair value, hence lower compensation expense under current accounting standards, may encourage the compensation committee to award more ESOs.
18. a. In theory, awarding shares and ESOs as compensation should give management a longer-run decision horizon, since compensation based on share performance is less affected than net income-based compensation by actions that may lower reported earnings in the short run (e.g., R&D) but which promise longer-term payoffs. A longer-run decision horizon should also discourage the type of short-run, opportunistic, behaviour charged, since the discovery of such behaviour will lower share price.
- b. The theory broke down in this instance since Kmart management compromised their longer-run interests by adopting very short-run dysfunctional behaviour, attempting to disguise the reasons for the firm's liquidity crunch, possibly in the belief that if they could successfully get through their short-run liquidity problems and pay off their suppliers, little harm would have been done, including to share price. As it turned out, the longer run payoffs of these actions were negative, since Kmart declared bankruptcy in 2002.

Also, awarding company shares and ESOs can produce effects on manager decision horizons opposite to those intended. For example, management's behaviour could have been driven by a "pump and dump" motive. That is, management realized the firm was in serious difficulties so they attempted to

maintain share price long enough to exercise ESOs and dispose of shares at inflated values.

It thus seems that, in practice, the awarding of shares and ESOs is not completely effective in motivating longer-run behaviour.

A non-opportunistic alternative strategy would have been for management to candidly discuss the real reasons for the solvency problem and their plans to work out of it. While this may or may not have prevented bankruptcy, it would have reduced the damage to management's reputation and possibly reduced or avoided the subsequent SEC charges.

19. a. If shareholders have information about executive compensation, such as amounts and types of compensation, they can relate this pay package to share price performance and can thus make informed decisions on whether the executives are overpaid in relation to their performance. If they feel these are out of line, they can bring pressure on the firm to change the compensation contract. This is particularly so if shareholders have a say on pay. Alternatively, or in addition, they can bid down the firm's share price.

With respect to risk, If the manager earns high compensation because the firm has adopted very risky strategies which have paid off, investors should be aware of this, since future risky strategies may not be so fortunate. This supports the disclosure of the relationship between compensation and risk management.

- b. Awarding incentive compensation in the form of ESOs and/or restricted stock is intended to give senior executives a longer-term decision horizon. A longer-term horizon discourages short-term, opportunistic actions that are dysfunctional towards the firm's longer-term interests, such as cutting maintenance, cutting R&D, or manufacturing for stock so as to bury overhead costs in inventory. Managers who hold company options and/or shares will realize that the market will punish the

firm's share price upon becoming aware of such actions, thereby lowering the value of their holdings.

c. Yes. If executive pay is too dependent on longer-term incentives, the executive will bear considerable non-diversifiable compensation risk, particularly if the performance measure is low in precision (that is, highly affected by factors that the manager feels are not informative about his/her effort in generating future payoffs). Then, to maintain reservation utility, the manager may demand higher expected pay to compensate for the greater risk, or change operating policies. Operating policy reactions to excessive compensation risk include adoption of strategies that involve relatively safe returns, and/or excessive hedging. For example, a manager may choose to drill for oil and gas in western Canada rather than in offshore, politically unstable, or arctic regions. Such actions are not necessarily in the best interests of the firm and its (diversified) shareholders.

However, if share-based compensation is in the form of ESOs, which have limited downside risk, the manager may adopt very risky operating policies, since he/she has everything to gain and little to lose. Some balance between these two types of longer-term incentives seems desirable.

Also, there are times when a short run decision horizon is in the firm's best interests, such as a need to cut costs or conserve cash. Longer-term decision horizons may work against these policies. Some balance between ESOs and short-term incentive awards is desirable.

Finally, if vesting periods are short and the manager is free to dispose of shares acquired, ESOs can generate incentives to opportunistically increase share price in the short run (Section 8.6), the opposite of the longer-run decision horizon they are intended to create.

d. A well- working managerial labour market is one in which the manager's market value (equivalently, the reservation utility he/she can command), reasonably reflects the manager's ability.

The compensation disclosure requirements add to the stock of publicly available information about managers (otherwise, why introduce them?). This information includes the types and amounts of compensation, the compensation committee's evaluation of the manager's ability and performance, and additional information about risk management so that investors can evaluate the manager's compensation relative to the riskiness of his/her operating policies..

Then, the ability of the market to evaluate manager ability, compare compensation cost to the value of the manager's services, and the extent to which the manager may engage in opportunistic behaviour is improved. That is, the market works better.

However, to the extent the power theory of executive compensation holds, the effectiveness of these disclosure requirements will be reduced, since the manager may have enough power in the organization to attain excessive compensation anyway. Note that the power theory includes tactics whereby the CEO may do this, namely camouflage to disguise excessive compensation and reduce public outrage.

A reasonable conclusion is that the disclosure requirements will improve the working of the managerial labour market, since they increase publicly available information about manager ability, performance, and risk, and make it more difficult for the manager to attain excessive compensation. The findings of Lo (2003) are consistent with this conclusion.

e. Yes. Under labour market efficiency, the manager's market value reflects only publicly available information. To the extent this information is incomplete or biased, we cannot completely rely on managerial labour market forces to provide incentives for managers to work hard. One reason is moral hazard, leading to earnings management to cover up shirking.

While the disclosure requirements may assist the managerial labour market to work well, it is unlikely that they will enable *full* public knowledge of the manager's

fundamental value. One reason is that the requirements say nothing about earnings management—controlling this is the responsibility of the accountant/auditor and GAAP. The disclosure requirements do include a “detailed explanation” of the compensation of the five highest-paid firm executives and a report from the compensation committee justifying the pay levels. Also, disclosures of the relationship between compensation and risk are required. However, these requirements are quite general and subjective and do not guarantee that every relevant aspect of manager performance will be taken into account or disclosed (consider, for example, evidence that compensation committees are less likely to penalize the manager for non-recurring losses than to reward them for non-recurring gains). Then, market forces of competition are hampered in their ability to drive compensation to a level that reflects the manager’s fundamental value.

Consequently, incentive plans are still needed. This conclusion is reinforced by the empirical results of Wolfson (1985) (admittedly, in a small sample from only one industry) and Bushman, Engel, and Smith, (2006), who found that while market forces reduce the need for an incentive contract, they do not eliminate it.

20. a. Whether say on pay is an advantage or disadvantage depends on which model of executive compensation is most descriptive of reality. If managerial labour markets are reasonably efficient, managers receive their reservation utility. If so, any reduction in utility of compensation as compensation committees anticipate or react to shareholder say on pay concerns may lead to managers leaving the firm or adopting less risky operating strategies. This harms both the firm and its (diversified) shareholders.

To the extent managerial markets are not fully efficient, the power theory may hold. Then, say on pay is an advantage if it reduces manager excess compensation. As the Royal Dutch Shell case illustrates, even if say on pay is non-binding, compensation committees may hesitate to proceed against shareholders’ expressed concerns.

b. No. manager compensation contracts involve a delicate mix of incentive, risk, and decision horizon considerations. It would be difficult for shareholders who are not expert in the theory of executive compensation to efficiently balance these compensation components.

Shareholders may instead react negatively to high absolute amounts of manager compensation, without realizing matters such as RPE, which may result in bonuses even if targets are not achieved when the manager's performance exceeds that of a peer group, and the huge size of some companies that makes compensation that is small relative to value created also look huge..

Shareholders may not appreciate the impact of effort aversion and compensation risk on manager pay. There is evidence that much of compensation constitutes a valid reimbursement for effort aversion and risk borne by the manager.

Also, the manager's compensation is less than it seems at first glance, since bonus deferrals, deferred stock, and lack of ability to diversify ESO and stock holdings reduce his/her compensation utility relative to its cost to the company.

The result of binding say on pay would be to severely disrupt manager performance and the managerial labour market.

21. a. The effect of SOX on CFO reservation utilities was to lower their reservation utilities if IC quality was low, and increase their reservation utilities if IC quality was high. Assuming efficient contracting, the level of compensation is positively related to reservation utility. A compensation decline in low IC quality firm CFO compensation post SOX thus implies lower CFO reservation utility, and vice versa for high IC quality CFOs.

b. The finding of higher executive bonus post SOX for low IC quality firms pre SOX implies an increase in the informativeness of net income about executive effort. Executive bonuses depend primarily on net income. Since SOX requires reporting not only the existence of an IC weakness but also its remediation, CFOs of weak IC firms have a strong motivation to correct the weakness. This improves

the quality of the firm's financial reporting, making it more difficult for executives to shirk and opportunistically disguise shirking by manipulation of reported earnings. Less shirking means greater executive effort and higher earnings (ROA). Compensation committees respond with higher bonuses..

Note: This argument is supported by the finding that higher executive bonus was not found for high IC quality firms. Since such firms reported no IC deficiencies, there is less incentive to further improve financial reporting quality.

This finding also implies sophisticated use of accounting information by compensation committees. Since other compensation components than bonus did not increase, this suggests an increase in the relative importance of net income in compensation. This is just what is predicted by contract and agency theory when the informativeness of a performance measure increases.

c. Yes, the operation of the managerial labour market for CFOs appears to have improved post SOX. The moral hazard problem has been reduced since it is more difficult for CFOs to opportunistically disguise low effort (in this case, low effort exerted towards internal controls over financial reporting quality) by manipulation of reported earnings. As a result, the compensation of CFOs and other managers better reflects the quality of their effort. The greater likelihood of low-quality CFOs being fired supports this argument.

d. The proper operation of the managerial labour market is important for a market-oriented economy because the success of such an economy depends on the quality of managerial effort as much as it depends on the proper operation of security markets. Due to moral hazard, managers may shirk on effort. However, if the market value of a manager (i.e., reservation utility) reflects performance, managers who do not shirk on effort and, as a result, generate increased firm performance, are rewarded. Those who do not perform are motivated to increase effort and firm performance. As a result, the economy becomes more productive, thereby increasing social welfare.

22. a A criticism often made against ESO compensation is that ESOs encourage excessive manager risk taking, since he/she has everything to gain and little to lose. Paying bonus in company bonds reduces the incentive to take risks since, unlike for ESOs, there is little effect on the value of bonds if the risky strategies pay off.

However, the incentive for UBS senior managers to adopt only safe operating strategies, which would not be desired by diversified investors, is not eliminated since only 40 % of bonuses are paid in bonds.

b. The UBS bonus plan would encourage adoption of conditionally conservative accounting policies. Such policies are designed primarily to protect debtholders through preventing payment of excessive dividends and preventing managers from receiving excessive earnings-based bonus compensation when earnings are inflated through unrealized gains. To the extent the manager is a debtholder, he/she does not receive dividends, and does not receive earnings-based bonus compensation. Consequently, there is less negative effect of conditional conservatism on the manager. Indeed, to the extent that conditional conservatism increases the probability that the firm survives, the manager will benefit from such policies through increased debt security (but lower interest rates).

c. It is unlikely that the manager's temptation to shirk and cover up through opportunistic earnings management would be affected. This temptation remains in the presence of bonus paid in debt. One reason is that the manager's concern about reputation would still continue, regardless of how bonus is paid. Also, to the extent that bonus is not entirely paid in bonds, bonus paid in stock-based compensation would also continue to encourage opportunistic earnings management.

Note: An argument that shirking would be encouraged because the value of company bonds is less affected than the value of ESOs and shares when lower net income is reported is equally acceptable. If there is greater manager shirking, this will likely result in more opportunistic earnings management to cover up.

Additional Problems

10A-1 Following major declines in their share prices, firms frequently reprice outstanding stock options issued to executives and employees as part of their incentive compensation. Reproduced here is an article from *The Financial Post* (April 3, 1997), describing such a repricing by Rogers Communications Inc. According to the article, Rogers' stock options with exercise prices ranging from \$12.64 to \$19.38 were lowered to an exercise price of \$8.31.

ROGERS REPRICES COMPENSATION OPTIONS

Rogers Communications Inc. repriced all the options its executives and other employees have received as part of their compensation packages in 1994 and 1995 because the company's share price has fallen so far, Rogers' annual shareholder circular says.

The options' new exercise price is \$8.31, significantly lower than the earlier prices, said Rogers' spokeswoman Jan Innes.

Previously, exercise prices ranged from \$12.64 to \$19.38. Also, the exercise period was extended to 2006.

"If you've got options and they're well above what the stock is trading at, they're certainly not very interesting," explained Jan Innes.

Rogers' circular says the company awards options to "focus executives' attention on the long-term interests of the corporation and its shareholders."

Analysts were surprised by the move.

"I can imagine that shareholders will be a bit perturbed," said one. "After all, their shares didn't get repriced. But I suppose it will help keep people motivated."

Roger's shares have fallen drastically since 1993, when they hit a \$21.88 high. The shares (RCIb/TSE) closed yesterday at \$8, down 55¢.

Ted Rogers' options, along with other non-management directors' options, will not be repriced.

Rogers' class A shareholders, the only ones entitled to vote, will vote on the arrangement at the company's annual meeting May 2. Ted Rogers controls over 90% of the A shares, so the vote should pass.

Meanwhile, working two jobs is paying off for Ted Rogers, president and chief executive of Rogers Communications and acting president of Rogers Cable-systems Ltd.

Rogers got a 21% salary increase to \$600,000 for 1996, plus a 160% rise in his bonus, to \$260,110, for a total of \$860,110. In addition, he was given 300,000 new options.

But he was not the highest paid executive at the cable and telecommunications company he founded.

That distinction went to Stan Kabala, chief operating officer of telecommunications and chief executive of Rogers Cantel Mobile Communications Inc.

Kabala, who joined Rogers Jan. 1, 1996, got a salary of \$600,000, plus a bonus of \$925,000, for a total of \$1,525,000. He was also awarded 119,000 stock options.

Kabala's big bonus was related to a deal completed in November 1996 with U.S. phone giant AT&T Corp., as well as for Cantel's performance.

The last time Rogers paid bonuses of such magnitude was in 1994 after it completed its takeover of Maclean Hunter Ltd.

SOURCE: *The National Post*, April 3, 1997. Reprinted by permission.

Required

- a. Give reasons why firms frequently issue stock options to executives and senior employees as part of their incentive compensation.
- b. If options are always repriced when share prices fall, regardless of the reason for the fall, what effects may there be on the incentives to work hard of officers and employees involved?
- c. If you were a shareholder of Rogers Communications, how would you react to the repricing?
- d. It has been argued that options held by the CEO should not be repriced, even if repricing is extended to less senior executives and employees. Note that the article reports that options held by Ted Rogers, president and CEO of Rogers Communications, are not being repriced. Why?

10A-2 Refer to Theory in Practice 10.3 in Section 10.6 concerning BCE Inc. Reproduced below are the 1997 consolidated statement of operations and Note 2 to the financial statements of BCE. The statement of operations shows an extraordinary charge of \$2.950 billion for stranded costs. After this extraordinary charge, operations showed a net loss for the year of \$1.536 billion.

Required

- a. Would you support exclusion of the charge from earnings for the purpose of managers' short-term incentive awards? Discuss.
- b. What is the persistence of the \$2.950 billion component of 1997 earnings? Your answer should be in the range [0–1]. Explain your answer.
- c. On April 23, 1998, *The Globe and Mail* reported "Earnings results fuel BCE shares to 52-week high." This headline refers to BCE's record reported earnings for its first quarter, 1998, of 48 cents per share excluding "onetime items." This is a 46% increase over 33 cents per share for the same quarter of 1997. The article

quoted the CEO of BCE as saying, "We continue to see solid growth in all areas of our operations." According to the article, these first-quarter results suggest a good performance by BCE in 1998, after a \$1.5 billion loss in 1997 due to a record \$2.9 billion charge at its telephone company subsidiary.

Give another reason, in addition to "solid growth," that may explain the record first-quarter results. As a member of the BCE compensation committee contemplating the 1998 annual short-term incentive awards, would you support basing these awards on the record first-quarter earnings? Explain your position.

Consolidated Financial Statements—BCE Inc.

Consolidated Statement of Operations

(\$ million, except per share amounts)

For the years ended December 31	<u>1997</u>	<u>1996</u>	<u>1995</u>
Revenues	33,191	28,167	24,624
Operating expenses	25,795	22,011	19,434
Research and development expense	<u>2,911</u>	<u>2,471</u>	<u>2,134</u>
Operating profit	4,485	3,685	3,056
Other income	<u>365</u>	<u>393</u>	<u>238</u>
Operating earnings	<u>4,850</u>	<u>4,078</u>	<u>3,294</u>
Interest expense – long-term debt	1,111	1,160	1,154
– other debt	<u>121</u>	<u>141</u>	<u>172</u>
Total interest expense	<u>1,232</u>	<u>1,301</u>	<u>1,326</u>
Earnings before taxes, non-controlling interest and extraordinary item	3,618	2,777	1,968

Income taxes	(1,522)	(1,118)	(819)
Non-controlling interest	<u>(682)</u>	<u>(507)</u>	<u>(367)</u>
Net earnings before extraordinary item	1,414	1,152	782
Extraordinary item	<u>(2,950)</u>	=	=
Net earnings (loss)	(1,536)	1,152	782
Dividends on preferred shares	<u>(74)</u>	<u>(76)</u>	<u>(87)</u>
Net earnings (loss) applicable to common shares	(1,610)	1,076	695
Earnings (loss) per common share¹			
Net earnings before extraordinary item	2.11	1.70	1.12
Extraordinary item	<u>(4.64)</u>	=	=
Net earnings (loss)	(2.53)	1.70	1.12
Dividends per common share ¹	1.36	1.36	1.36
Average number of common shares outstanding (millions) ¹	636.0	632.7	622.9

¹Reflects the subdivision of common shares on a two-for-one basis on May 14, 1997.

Extraordinary Item

As at December 31, 1997, BCE determined that most of its telecommunications subsidiary and associated companies no longer met the criteria necessary for the continued application of regulatory accounting provisions. As a result, BCE recorded an extraordinary non-cash charge of \$2,950 million, net of an income tax benefit of \$1,892 million and a non-controlling interest of \$38 million. Also included in the extraordinary item is an after-tax charge of \$97 million representing BCE's share of the related extraordinary item of its associated companies.

The operations of most of BCE's telecommunications subsidiary and associated companies no longer met the criteria for application of regulatory accounting provisions due to significant changes in regulation including the implementation of price cap regulation which replaced rate-of-return regulation effective January 1, 1998, and the concurrent introduction of competition in the local exchange market. Accordingly, BCE adjusted the net carrying values of assets and liabilities as at December 31, 1997, to reflect values appropriate under GAAP for enterprises no longer subject to rate-of-return regulation.

The determination by BCE that most of its telecommunications subsidiary and associated companies no longer met the criteria for the continuing application of regulatory accounting provisions is the result of a review, which began in 1997, to assess the impact of the introduction of price cap regulation coupled with the introduction of competition in the local exchange market. Before the advent of these two factors, accounting practices were based on a regulatory regime which provided reasonable assurance of the recovery of costs through rates set by the regulator and charged to customers. These regulatory accounting provisions resulted in the recognition of certain assets and liabilities along with capital asset lives which were substantially different from enterprises not subject to rate-of-return regulation.

The extraordinary charge consists of a pre-tax charge of \$3,602 million related to capital assets and a pre-tax charge of \$1,181 million to adjust the carrying values of other assets and liabilities to arrive at carrying values appropriate for enterprises not subject to rate-of-return regulation. The amount of the charge related to capital assets was determined based upon an estimate of the underlying cash flows using management's best estimate assumptions concerning the most likely course of action and other factors relating to competition, technological changes and the evolution of products and services. The net carrying values of capital assets were adjusted primarily through an increase in accumulated depreciation. The primary component of the \$1,181 million charge relates to the write-off of deferred business transformation and workforce reduction costs.

Source: BCE Inc., 1997 annual report. Reprinted by permission.

10A-3 Many firms “reprice” ESOs following major declines in their share price by lowering the exercise price. This is because ESOs issued before the decline are deep out of the money, hence unlikely to be of any value. Such moves usually outrage shareholders, who have seen the value of their shares also fall but who receive no comparable benefits, and are prominently reported in the media.

Saly (1994) did an original analytical study of the repricing of ESOs. Her analysis applies to repricing after a market downturn, such as the downturn experienced in the early 2000s, and not to a firm-specific fall in share price that may be due to manager shirking.

As Saly points out, compensation contracts are incomplete. That is, it is unlikely that provisions for adjustments to compensation following a market downturn are anticipated and written into the compensation plan. The question then is, should the contract be “renegotiated” following a market downturn by repricing ESOs? If so, this would violate a general rule that, once signed, contracts tend to be rigid.

In Saly’s model, the answer is yes. Renegotiation of the ESOs’ strike price increases the correlation between manager effort and the performance measure (share price), since a market downturn is not a result of low manager effort. Without the possibility of renegotiation, the risk-averse manager would have to be compensated for the risk inherent in the possibility of a market downturn if he/she is to attain reservation utility. If a downturn occurs and there is no repricing, the manager’s expected utility of compensation will fall, since the expected proceeds from ESOs are effectively zero. This will cause him/her to either shirk or leave the company.

In June 2001, Nortel Networks Corp. announced that it was cancelling its existing ESOs and replacing them with new ESOs with a lower strike price. Nortel’s share price, which had been in excess of \$100 when many of the ESOs were issued, suffered following the market collapse of share prices of high-tech firms, and was trading in the \$20 range at the time of the announcement. Nortel’s move was widely

reported in the financial media and drew significant negative comment. For example, *The Globe and Mail* (June 5, 2001) quoted Carol Bowie of the Investor Responsibility Research Center as saying "... you can't make the 50-yard kick. So we'll cut it down to 35." It also quoted J. Richard Finlay, head of the Centre for Corporate and Public Governance, as saying "We'd all like to be told our high school physics test where we got 35 out of 100 is now 35 out of 50, but shareholders don't have that luxury."

Nortel defended its move by claiming it was necessary to retain key employees, pointing out that top manager ESOs were not being repriced (this would require shareholder approval) but only those of lower level employees. In the same issue of the *Globe*, Brian Milner pointed out that the cost to Nortel of repricing the ESOs is zero, and that no further dilution of shareholders' equity will result since the old ESOs are being cancelled. Nevertheless, Milner comments that in the public eye the repricing is still "a reward for crummy performance."

Required

- a. In the light of Saly's model, do you agree with Nortel's ESO repricing? Explain why or why not.
- b. Nortel planned to cancel existing ESOs and replace them with new ones, rather than simply repricing the existing options to a lower exercise price. Recall that in 2001, GAAP did not require expensing of ESOs. Rather, most firms, including Nortel, followed APB 25 (see Section 8.6) in the financial statements proper. Why do you think Nortel replaced the old ESOs with new ones, rather than simply repricing the existing ones?
- c. In its 2003 proxy statement, the Compensation Committee of General Electric Company reported that the company has a policy of not repricing ESOs. Why would a company have such a policy?

Suggested Solutions to Additional Problems

10A-1

a. Some reasons why firms issue options as executive and senior employee compensation are:

- Managers with a short-term decision horizon may engage in short-run income maximization if the incentive plan is based only on reported net income. Options are intended to lengthen the manager's decision horizon, thereby reducing the incentive to engage in this behaviour.

Note: To the extent that options encourage "pump and dump" and other types of opportunistic ESO behaviour, the force of this argument is reduced.

- Options do not require cash, unlike salaries or bonuses. This can be particularly attractive to rapidly growing firms and firms that extend option grants to all employees.
- At the time of the article, ESOs were typically not recorded as an expense, thereby improving the bottom line. While this may not have mattered under efficient securities market theory (assuming the market is aware of the details of ESO awards), it does matter under contracting theory, due to contract rigidity and resulting impacts on the probability of violation of debt contracts.

Note: The preceding argument no longer applies since GAAP now requires ESO expensing.

- By reducing downside compensation risk, options may enable more efficient compensation contracts by providing managers with incentives to engage in risky projects. This incentive can go too far, however, and encourage managers to take on too much risk.

b. Employees will work less hard because if their shirking leads to a drop in share price below exercise price, they expect to be bailed out by option repricing.

c. As a shareholder, you may object if you feel that the officers and employees of Rogers are "off-the-hook" for the decline in share price while you are not. This raises ethical issues of fairness.

Also, from b, the repricing may lead to reduced employee effort in future if employees feel they will always be bailed out.

The lower exercise price will further dilute the equity of existing shareholders, leading to a further fall in market value of Rogers' shares.

You may not object, however, if the repricing leads talented and motivated employees to stay with the firm, since the fall in value of their options may have reduced their expected utilities below reservation level. This could cause senior people to leave the firm, possibly leading to a further decline in share price. Even if employees do not leave, if there is little likelihood that their ESOs will ever be worth anything, their incentive to exert effort falls, so that they may shirk. Of course, if the reason the options are underwater in the first place is shirking, they should leave since it is likely they will continue to shirk after repricing.

Another reason not to object is that the fall in share price may be due to economy-wide effects, or to securities market inefficiencies leading to the bursting of a bubble. Then, you may feel that the share price decline is not really the employees' fault.

d. Ultimately, it is the CEO who is most responsible for the fall in stock price. Consequently, the arguments against repricing in parts b and c apply with special force to the CEO.

Note: Repricing is an example of contract incompleteness. If the fall in share price had been anticipated, provisions to deal with it could have been incorporated into the compensation contract. Without such provisions, the media attention to

repricing reinforces contract rigidity, since the firm knows that if it changes the original contract provisions by repricing it will receive adverse publicity.

10A-2

a. If it is accepted that the charge is not management's "fault," (i.e., low informativeness with respect to manager effort) then it seems reasonable to support exclusion for purposes of BCE's short-term incentive awards. If the charge is deemed to be within management's responsibility and is informative about management effort, this would support inclusion.

Note: Exclusion would also be supported to the extent that the change in regulatory environment reduced BCE's share price. Assuming that, like most large public firms, management holds a considerable number of shares, both directly, and indirectly as options and share units, management should not be penalized twice. This could induce dysfunctional behaviour.

b. Persistence is 1, assuming that the estimated \$2.950 billion cost of the stranded costs is accurate. While the losses leading to the extraordinary charge are not yet realized (i.e., the charge is an accrual), they do seem to have been validly incurred, since the deregulation event that lead to the losses has actually taken place, on January 1, 1998, according to Note 2. However, these charges are unlikely to recur. In Ramakrishnan and Thomas' (1991) terms (Section 5.4.1), they are transitory, with an ERC of 1. That is, since there is a real loss to BCE, the firm's market value, assuming market efficiency, will fall by that amount, other things equal.

c. Another reason for the record first quarter results is that the \$2.95 billion 1997 writeoff reduced future charges for amortization, and created reserve accounts to absorb costs that might otherwise be charged to expense in 1998. In effect, the effect of the writedown will be to raise future years' reported earnings by \$2.95 billion relative to what they would be without the charge.

As a member of the compensation committee, an argument for not basing short-term incentive awards for 1998 on the record profits is that a portion of these profits arose from reduced amortization and other expenses resulting from the 1997

written down. This portion of profits should be excluded from 1998 earnings for bonus purposes because it is not informative about 1998 management effort.

This argument is strengthened since the 1997 write-down was excluded for bonus purposes in 1997 (Theory in Practice 10.3). If 1998 profits for bonus purposes are not reduced, management would benefit both ways. That is, if management was not penalized for the 1997 charge, it should not be rewarded for the increased reported earnings in future periods that result from the charge.

Assuming management knew that they would not be penalized for the 1997 write-down but rewarded on the basis of the full amount of subsequent reported profits, management has a temptation to overstate the 1997 write-down. The possibility of such overstatement further supports reducing 1998 profits for bonus purposes.

However, counterarguments can be made, especially if it is felt that the stranded costs were not management's responsibility. In effect, the 1998 write-down "clears the decks." Management should be evaluated for bonus purposes with respect to the new environment, and not penalized for ghosts of the past. That is, *if* BCEs assets after the write-down properly measured their fair values after deregulation, then management compensation should be based on net income that reflects these lower fair values.

10A-3

a. The collapse of share prices of high-tech firms suggests that economy-wide events were responsible for the drastic decline in Nortel's share price. This suggestion is reinforced by behavioural finance, which suggests that share prices are subject to momentum and bubble effects, which can lead to a sudden collapse of share prices. Thus, it does not seem that shirking by Nortel employees was the cause of Nortel's share price collapse. Then, Saly's analysis supports repricing since, without it, employees may leave the organization. Furthermore, according to Saly, without the possibility of renegotiation (repricing is a form of renegotiation) following a major share price decline, risk-averse employees would have to be compensated *ex ante* for this risk in order to attain their reservation utility. In effect,

they will demand higher compensation if they expect to bear the risk of an economy-wide collapse themselves.

b. Under APB 25, an expense had to be recorded to the extent that the exercise price of an employee option was less than share price when the options were granted. If the existing options were repriced downwards, the new exercise price would be less than share price at the time they were granted. This would trigger the recording of an expense under APB 25. If the options were cancelled and replaced with new ones with an exercise price not less than the current Nortel share price (more precisely, the share price on the date the new options were granted), no expense would be recognized under APB 25. Since the effect on employee effort and retention is the same either way, Nortel preferred to avoid recording an expense.

c. Reasons why GE would have a policy of not repricing ESOs include:

- To avoid the strong media and investor criticism that follows repricing. This could trigger shareholder backlash, such as a fall in share price because of investors selling their shares, and difficulty in selling any new share issues. It could also result in political costs, such as new and expanded compensation disclosure regulations, arising from the adverse media attention.
- GE may have had other components in its compensation plan, such as restricted stock and/or bonuses, that could be adjusted to maintain the reservation utility of key employees. This could be less costly than the costs of investor backlash.
- GE may have been unaware of Saly's argument that when ESOs are not repriced, employees must bear the cost of underwater ESOs. To the extent ESOs go underwater due to economy-wide events, employees' anticipation of the risk resulting from this possibility leads them to demand higher expected compensation.

- GE may have been aware of Saly's argument but felt that if its ESOs go underwater the reason is likely to be manager shirking rather than economy-wide events. If employees felt that they would likely be bailed out for the adverse effects of shirking on share price, effort would be adversely affected since awareness of likely repricing reduces employee compensation risk, and employees must bear risk to motivate effort.