INSIDER TRADING REGULATION AND THE PRODUCTION OF INFORMATION: THEORY AND EVIDENCE

JAMES D. COX*

The traditional view of managers who formulate disclosure policy for publicly traded corporations is currently embodied in the mandatory disclosure rules of the federal securities laws: periodic reporting requirements are mandated because managers lack sufficient incentives to disclose trustworthy, confidential corporate information.[1] Further underscoring the necessity of mandatory disclosure rules is the widely held fear that managers will disclose material information only after they have exploited its values for their private gain. Thus the necessity to assure that insiders do not selfishly appropriate the advantage of their natural monopoly over corporate information partially justifies the disclosure rules.[2]

The major rejoinder to the traditional view is the "free market" approach, which counsels that wealth maximizing managers will release information up to the point that the marginal benefits of disclosure equal the marginal costs.[3] The "free market" view assumes that managers will

* Professor of Law, Duke University. The author is grateful for the support of the E.T. Bost Research Professorship during the preparation of this Article.

1 Manipulation through delay and nonstandardized reporting practices are emphasized in the legislative reports accompanying the enacting of the periodic reporting provisions mandated in the Securities Exchange Act of 1934. *See* H.R. REP. NO. 1383, 73d Cong., 2d Sess. 5, 11-12 (1934); S. REP. NO. 792, 73d Cong., 2d Sess. (1934). An excellent description of the many abuses prompting the enactment of the federal securities laws appears in J. SELIGMAN, THE TRANSFORMATION OF WALL STREET: A HISTORY OF THE SECURITIES EXCHANGE COMMISSION AND MODERN CORPORATE FINANCE 1-72 (1982). Professor Seligman also has compiled the most comprehensive examination of the arguments in support of mandatory corporate disclosure. *See* Seligman, *The Historical Need For a Mandatory Disclosure System*, 9 J. CORP. L. 1 (1983).

2. This is frequently a justification for prohibiting insider trading. *See e.g.*, Schotland, *Unsafe at Any Price: A Reply to Manne, Insider Trading and the Stock Market*, 53 VA. L. REV. 1425, 1448-49 (1967); Scott, *Insider Trading: Rule 10-b, Disclosure and Corporate Privacy*, 9 J. LEG. STUD. 801, 810-11 (1980).

3. If one were to take account only to the volume of scholarship advocating this view, mandatory disclosure would appear to have a very attenuated future. *See, e.g.*, H. MANNE & E. SOLOMON, WALL STREET IN TRANSITION: THE EMERGING SYSTEM AND ITS IMPACT ON THE ECONOMY (1974); S. ROSS, DISCLOSURE REGULATION IN FINANCIAL MARKETS: IMPLICATIONS OF MODERN FINANCE THEORY AND SIGNALING THEORY IN ISSUES IN FINANCIAL REGULATION 177 (Edwards ed. 1979); Easterbrook & Fischel, *Mandatory Disclosure And The Protection of Inves-*

disclose in order to maximize their own utility. Utility maximization is an interesting problem in the public corporation because stockholders and managers are different sets of individuals. Therefore, the managers' interest in maximizing their own utility is not always concentric with the stockholders' desire that the managers should maximize the firm's value.[4] This classic problem of "separation of ownership from control" sets in motion the powerful, albeit natural, forces which sometimes cause managers to maximize their utility at the stockholders' expense.[5] Simply illustrated, the manager who owns a half percent of his company's stock gains only fifty dollars by locating and directing a new business opportunity worth $10,000 to the company. If, however, he appropriates the advantage exclusively for himself, his personal wealth will increase by $9,950 above that he would enjoy had he acted to increase the firm's value. Adherents to the "free market" view salve their unease over the

tors, 70 VA. L. REV. 669 (1984); Benston, *Required Disclosure and the Stock Market: An Evaluation of the Securities Exchange Act of 1934*, 63 AM. ECON. REV. 132, 134 (1973). Benston concludes that the Securities Exchange Act of 1934 did not alter the riskiness of securities markets from their level prior to its enactment. *Id.* at 145-49. Benston, however, proceeds on the questionable assumption that the forces at work in the pre-1934 market are identical to those in the seven years studied after its enactment. Moreover, upon close examination of his data, Benston's findings equally support the view that the Exchange Act reduced the market's overall riskiness. Stigler, *Public Regulation of the Securities Markets*, 37 J. BUS. 117 (1964). For an excellent critique of the empirical bases of the "free market" view, see Seligman, *supra* note 1. *See also* Coffee, *Market Failure and the Economic Case for a Mandatory Disclosure System*, 70 VA. L. REV. 717 (1984). It should be emphasized that management's disclosure need not be made directly to investors, but more frequently occurs through financial intermediaries. For example, favorable future prospects may be disclosed only to the firm's underwriter in making its preparation to go public. The underwriter will use the information to price the security. Even though not disclosed in the prospectus covering the public offering, investors relying upon the underwriter's reputation will acquire the security with a belief that underwriters would not have established such a price unless armed with material nonpublic information. Easterbrook & Fischel, *supra*, at 688.

4. At the heart of this view is the emerging field of agency theory, whose seminal work is Jensen & Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. FIN. ECON. 305 (1976). Other foundational works are: Fama, *Agency Problems and the Theory of the Firm*, 88 J. POL. ECON. 288 (1980); Ross, *The Economic Theory of Agency: The Principal's Problems*, AM. ECON. REV. PAPERS & PROC., May 1973, at 134; Alchian & Demsetz, *Production, Information Costs, and Economic Organization*, 62 AM. ECON. REV. 777 (1972); Spence & Zeckhauser, *Insurance, Information, and Individual Action*, AM. ECON. REV. PAPERS & PROC., May 1971, at 380.

5. While managers' departures from the goal of maximizing the firm's value have long been laid on the cleavage between ownership and management, a view popularized by A. BERLE & G. MEANS, THE MODERN CORPORATION AND PRIVATE PROPERTY (1932), not all deviations can be so blamed. Concern for management discretion is merited whenever weaknesses exist in competitive conditions so that managers enjoy considerable discretion in developing business strategies. O. WILLIAMSON, THE ECONOMICS OF DISCRETIONARY BEHAVIOR (1964).

cleavage between the interests of owners and managers with their faith that the parties can contract to provide the incentives necessary for managers to act in an optimal manner.[6] Such contracting necessarily implicates disclosure because owners need information to determine whether their managers are fulfilling their contractual obligations.

The process of contracting is made difficult by the information asymmetries that characterize securities markets. Because managers of public corporations hold a natural monopoly over insider information, their obeisance to their contractual obligations is uniquely within their knowledge, except as may be revealed through their disclosures about the firm's performance. Absent a provision in their contract for disclosure of items relevant in evaluating their stewardship of the firm, managers have both the exclusive discretion and the natural incentive to report those items which are in their interests and to conceal matters which are not to their benefit.

The federal securities laws, however, have eroded much of the manager's natural monopoly over information regarding the firm's past performance and current financial position. The securities laws have thereby given stockholders better information about their managers' achievements and possible transgressions. The federal securities laws compel the periodic reporting of completed events,[7] which means the focus of the laws is upon the disclosure of information which is easiest to

6. The manager will continue to accede to the owners' contractual demands which curb the managers' abuses so long as whatever compliance with the owners' demands nets for the manager is a unit of wealth more valuable than the managerial prerequisites or abuses foregone. Jensen & Meckling, *supra* note 4, at 326. And from the owners' view, incentives and other devices to curb the manager's abuses will be undertaken to the point that their marginal benefits equal the marginal cost of each additional step. In a world in which owners derive declining marginal benefits and increasing marginal costs associated with curbing nondesirable managerial behavior, some abuses cannot only be expected but are optimal. *Id.* at 327-28. These so-called agency costs are therefore impounded in the investor's assessment of the firm's value when considering whether to invest in its securities and at what price. From this brief description, it is easy to envision that the problem of contracting is indeed a formidable one. *See* Holmstrom, *Moral Hazard and Observability,* 10 BELL J. ECON. 74 (1979); Ross, *supra* note 4; Shavell, *Risk Sharing and Incentives in the Principal and Agency Relationship,* 10 BELL J. ECON. 55 (1979).

7. Section 13(a)(2) of the Exchange Act, 15 U.S.C. § 78(m)(a), requires all issuers of equity securities subject to § 12's registration requirements, 15 U.S.C. § 78(m)(a)(2), (g)(1), to file annual and quarterly reports. Although the accounting information in the annual reports is prepared in accordance with generally accepted accounting principles and is certified after an audit to comply with those principles, the quarterly reports do not purport to reflect either an audit or generally accepted accounting principles. They are therefore subject to greater control by management than are the annual reports. *See generally* J. COX, FINANCIAL INFORMATION, ACCOUNTING AND THE LAW 489-90 (1980).

regulate. These events have occurred or items are in existence against which the firm's auditors can verify the reported transaction or item. Similarly, comparisons can be made if the disclosure is subsequently claimed to be fraudulent. In a sense, both auditors and potential liability serve to authenticate the otherwise bold assertions of managers regarding their stewardship of the firm.[8]

Except in rare cases, the federal securities laws do not compel disclosure of events or acts that are expected, but have not yet occurred.[9] Such forward-based information, the most common being financial forecasts, is essentially unregulated. Authenticity is a more serious problem for this type of information than it is for information compelled to be disclosed under the federal securities laws, because an inherent characteristic of forward-based information is the absence of objectively verifiable, completed events which independent parties can examine or test.[10] External

8. Auditing appears to be one of the very earliest devices used to reduce the manager's agency costs for the benefit of the firm's remote owners. *See* Watts & Zimmerman, *Agency Problems, Auditors, and the Theory of the Firm: Some Evidence*, 26 J. L. & ECON. 613 (1983). Liability for materially misleading financial statements has been seen as a form of warranty which honest firms can more economically attach to their statements than can firms whose books are falsified. *See* Beaver, *The Nature of Mandated Disclosure*, in SEC ADVISORY COMMITTEE ON CORPORATE DISCLOSURE, REPORT OF RECOMMENDATIONS 618, 637-39 (1977).

9. Courts have not required internal forecasts to be disclosed, even though the corporation was itself engaged in an offer to acquire shares from its stockholders. Coyne v. MSL Ind., [1975-76 Transfer Binder] *Fed. Sec. L. Rep. (CCH)* ¶ 95,451 (N.D. Ill. 1976). *See also* Fisher v. Plessey Co., [1982-83 Transfer Binder] *Fed. Sec. L. Rep. (CCH)* ¶ 99,129 (S.D.N.Y. 1983). However, reliable asset appraisals in the hands of one contemplating the liquidation of the corporation must be disclosed in connection with seeking shareholder approval of a merger which was a step toward the defendants' plan to capture the firm's hidden liquidation value. Gerstle v. Gamble-Skogmo, Inc., 478 F.2d 1281 (2d Cir. 1973). Asset appraisals that are believed speculative or otherwise unreliable need not be disclosed by the control person who seeks to acquire the minority stockholders' shares. *See, e.g.*, Flynn v. Bass Bros. Enters., Inc., 744 F.2d 978 (3rd Cir. 1984); Biechele v. Cedar Point, Inc., 747 F.2d 209 (6th Cir. 1984).

10. This quality caused the SEC for nearly 40 years to justify its prohibition of financial forecasts in SEC filings. A thorough critique of the SEC's position on forward looking information is found in Manne, *Accounting and Administrative Law Aspects of* Gerstle v. Gamble-Skogmo, Inc., 15 N.Y. L.F. 304 (1969). The SEC's policy became more flexible in 1972 when it began a lengthy and controversial administrative process, *see* J. COX, FINANCIAL INFORMATION, ACCOUNTING AND THE LAW 268 (1980), which led ultimately to the adoption of a safe harbor rule for financial forecasts included in SEC filings. 17 C.F.R. § 230.175. *See generally* Note, *The SEC Safe Harbor for Forecasts—A Step in the Right Direction?*, 1980 DUKE L.J. 607. Although assumptions and procedures managers employ in preparing a forecast can be externally examined, such examination and verification occur with the significant caveat that the process is an unreliable one and does not include verification of the events and assumptions underlying the forecast. For example, under the language currently proposed for the accountant's opinion accompanying a financial projection, the independent accountant states, "some assumptions inevitably will not materialize and unanticipated

certification, therefore, is not a reasonable response to the authenticity problem which forward-based information poses. Moreover, the mere difference between the forecasted amount and the level actually achieved during the forecast period does not mean that the manager fraudulently prepared the forecast so that liability should attach.[11] Indeed, forecasts rarely expose their preparers to liability regardless of how much they are in error.[12]

The proponents of the "free market" view do not share these concerns over the production or authenticity of forward-based information.[13] Each concern is viewed as a question of managerial incentives, for which they offer the suggestion that deregulation of insider trading rules would likely encourage managers to disclose corporate information. Moreover, proponents of the "free market" view have even suggested that insider trading can also serve to authenticate corporate disclosures by serving to bond their accuracy.[14]

Because the federal securities laws do not compel disclosure of for-

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events and circumstances may occur; therefore, the actual results achieved during the projection period will vary from the projection, and the variations may be materially." AICPA AUDITING STANDARDS BOARDS, PROPOSED AUTHORITATIVE STATEMENT PROSPECTIVE FINANCIAL STATEMENTS ¶ 28 (1984).

11. *See, e.g.*, Marx v. Computer Sciences Corp., 507 F.2d 485, 489 (9th Cir. 1974); Digital Equip. Sec. Litig. [1984-85 Transfer Binder] *Fed. Sec. L. Rep. (CCH)* ¶ 91, 991 (D.C. Mass. 1985); REA Express, Inc. v. Interway Corp., 410 F. Supp. 192, 196 (S.D.N.Y. 1976).

12. The few cases in which a financial prediction has been held to violate the federal securities laws invariably have occurred when management has proferred an optimistic report while being aware of unfavorable business conditions which were inconsistent with the assumptions underlying the forecast. *See* Goldman v. Belden, [1984-85 Transfer Binder] *Fed. Sec. L. Rep. (CCH)* ¶ 91,950 (2d Cir. 1985); Sunstrand Corp. v. Sun Chem. Corp. 553 F.2d 1033, 1040 (7th Cir.), *cert. denied,* 434 U.S. 875 (1977) (projection was recklessly prepared and was but one of many false utterances released by the defendants); Marx v. Computer Servs. Corp., 507 F.2d 485 (9th Cir. 1974) (decision rendered that forecast was carelessly or recklessly prepared but its holding is questionable today after the Supreme Court's holding in Ernst & Ernst v. Hochfelder, 425 U.S. 185 (1976), that liability under the antifraud provision cannot be based upon proof of mere negligence); Beecher v. Able, 374 F. Supp. 341 (S.D.N.Y. 1974). *See generally,* Fiflis, *Soft Information: The SEC's Former Exogenous Zone,* 26 UCLA L. REV. 95, 118-27 (1978).

13. *See, e.g.*, Carlton & Fischel, *The Regulation of Insider Trading,* 35 STAN. L. REV. 857, 867-68 & 879 (1983) (ability to trade on insider information encourages management to undertake wealth maximizing discretionary corporate acts and is consistent with the early announcement of their acts).

14. *See, e.g.*, Dye, *Insider Trading and Incentives,* 57 J. BUS. 295 (1984) (insider trading is one way owners can *improve* earnings-contingent contracts with their managers); Leland & Pyle, *Information Asymmetries, Financial Structure, and Financial Intermediation,* 32 J. FIN. 371 (1977) (potential welfare costs, however, seen if insiders invest more in their corporation than otherwise so that wealth is redistributed in favor of insiders and at the expense of outsiders).

ward-based information and the standard methods for their authentication work poorly the "free market" view remains the exclusive approach for its study. This Article offers a "free market" explanation of the forces which stimulate the production of the most important form of forward-based information, a company's financial forecast. Part I considers the social value of forecasts, a question requiring an affirmative answer if further questions of how to stimulate their production are to be raised. Part II addresses the problem of the financial forecast's authenticity. Authenticity is a special problem because informational asymmetries are great when dealing with future-based information. This Article considers whether external review or collateral disclosure undertakings can overcome this problem. Part III develops a theory of why and how the corporate interest can be served by harnessing the manager's insider trading activity to the production and authentication of financial forecasts. This theory is developed through a proposed compensation schedule for managers which looks toward market-based rewards. In Part IV, the theory is contrasted with available evidence which surprisingly supports each important factor of the managerial compensation schedule. The final part of the Article raises questions yet to be studied before fully embracing the proposed compensation schedule.

I. SOCIAL VALUE OF FORECASTS

The value of any disclosure policy must be judged by its impact on the allocational efficiency of securities markets.[15] In the context of financial forecasts, this question is often debated in terms of the relative accuracy of forecasts in general, with accuracy being the difference between the forecasted amount and the level of activity achieved when the forecasted event or period has occurred.[16] So framed, the inquiry is whether re-

15. To improve allocational efficiency, more is required than merely facilitating the exchange values established among shareholders. Production by affected firms must not only be affected, but also be affected by an amount greater than the resources consumed in producing the information released. *See generally* Hirschleifer, *The Private and Social Value of Information and the Reward to Incentive Activity,* 61 AM. ECON. REV. 561 (1971); Fama & Laffer, *Information and Capital Markets,* 44 J. BUS. 289 (1971). For another disclosure problem whose social benefits are correctly analyzed only in terms of its impact on the allocation of production resources and not by evaluating fairness as between groups of investors, see Fox, *Shelf Registration, Integrated Disclosures, and Underwriters Due Diligence: An Economic Analysis,* 70 VA. L. REV. 1005 (1984).

16. This indeed was the basis for the SEC's long-held position that financial forecasts were inherently misleading and, therefore, inappropriate for inclusion in SEC filings. *See* Fiflis, *supra* note 12. Accuracy, however, has more often been raised when the question is whether firms should be compelled to issue forecasts. *See* Schneider, *Nits, Grits, and Soft Information in SEC Filings,* 121 U.

sources are better allocated among competing investment opportunities if the additional disclosed information is not accurate. Historically, therefore, the response to financial forecasts was evaluated solely in terms of their accuracy.

The appropriate regulatory response to financial forecasts cannot be premised upon an assessment of their accuracy. A significant weakness in basing the determination solely upon the relative accuracy of forecasts is that the conclusion that a certain proportion of reported forecasts are in error of a certain amount is unimportant, unless there is knowledge of what amount of deviation from the actual amount achieved is deemed material to investors. Some assumption must invariably be made of the variance between the figure forecast and the amount achieved which investors consider material as a predicate to assessing whether the forecast serves or disserves investors. Furthermore, it is naive to assume investors accept forecasts uncritically. They may, and most likely do, adjust management forecasts to their own estimate of the possible outcomes.

Even with the above caveats regarding accuracy as the standard for evaluation, the data of financial forecasts supports a policy of encouraging management forecasts. Although management forecasts are in error by ten to fifteen percent,[17] managers are not the only ones forecasting their corporation's future likely performance. Security analysts more frequently make published forecasts than do managers. Importantly, when the accuracy of management forecasts are compared with those of analysts, management forecasts are the more accurate.[18]

PA. L. REV. 254, 257-62 (1972); Note, *Mandatory Disclosure of Corporate Projections and the Goal of Securities Regulation,* 81 COLUM. L. REV. 1525, 1534-37 (1981).

17. Several studies have been made comparing financial forecasts of annual earnings or revenues with the earnings or revenues achieved. *See, e.g.,* Brown & Niederhoffer, *The Predictive Content of Quarterly Earnings,* 41 J. BUS. 488 (Oct., 1968); Copeland & Marionia, *Executives' Forecasts of Earnings per Share versus Forecasts of Naive Models,* 45 J. BUS. 497 (1972); Cragg & Malkiel, *The Consensus and Accuracy of Some Predictions of the Growth of Corporate Earnings,* 23 J. FIN. 67 (1968); Daily, *The Feasibility of Reporting Forecasted Information,* 46 ACCT. REV. 686 (1971); Tull, *The Relationship of Actual and Predicted Sales and Profits in New-Product Introductions,* 40 J. Bus. 233 (1967). For example, McDonald studied 201 predictions of net income made 8 to 12 months in advance of the first announcement of the company's annual net income. He found that 35.3% of the predictions were within 5% of reported net income; 48.8% were within 10% of actual net income; and 39.8% were more than 15% from actual new income. McDonald, *An Empirical Examination of the Reliability of Published Predictions of Future Earnings,* 48 ACCT. REV. 502 (1973). The mean actual prediction error in McDonald's study was 13.6%. It should come as no surprise that McDonald's sample is consistent with that of other studies in revealing management's proclivity to *over*-predict net income.

18. In a representative study contrasting management forecasts with those of outside analysts,

The social welfare implication of this finding arises from the fact that different information sets always elicit different stock price behavior. Increasing the frequency of the more accurate management forecasts improves the allocational efficiency of capital markets more than one that leaves the market to the less accurate analysts' forecast.[19] Otherwise, the market is left to the less accurate analysts' forecasts. Hence, even if judged on the basis of accuracy, encouraging managers' financial forecasting is socially desirable.[20]

The question of a forecast's accuracy is particularly important to in-

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the mean forecast error for 88 management forecasts was found to be 10.1% whereas the analysts' average error was 13.8%. Basi, Carey & Twark, *A Comparison of the Accuracy of Corporate and Security Analysts' Forecasts of Earnings,* 51 ACCT. REV. 244, 249-50 (1976). *See also* Imhoff, *The Representative of Management Earnings Forecasts,* 53 ACCT. REV. 836, 845-47 (1978); Jaggi, *Further Evidence on the Accuracy of Management Forecasts Vis-a-Vis Analysts' Forecasts,* 55 ACCT. REV. 96 (1980); Ruland, *The Accuracy of Forecasts by Management and by Financial Analysts,* 48 ACCT. REV. 439 (1978). Analysts' forecasts, however, are more accurate than are the bare use of economic forecasting models because analysts incorporate in their estimates a wider range of variables. *See* Fried & Givoly, *Financial Analysts' Forecasts of Earnings,* 4 J. ACCT. & ECON. 85 (1982).

19. The relative accuracy of the two groups of forecasters implicates disclosure policies when it is also evident that investors rely on both management and analysts. Gonedes, Dopuch & Penman, *Disclosure Rules, Information-Production and Capital Market Equilibrium: The Case of Forecast Disclosure Rules,* 14 J. ACCT. RESEARCH 89 (1976).

20. A finding that a distinct form of financial announcement, such as a financial forecast, has informational content does not in most cases establish that the disclosure policy should be to require release of such information. Beaver, *Implications of Securities Price Research for Accounting: A Reply to Bierman,* 49 ACCT. REV. 563, 570 (1974); Gonedes, *Efficient Capital Markets and External Accounting,* 47 ACCT. REV. 11 (1972). *But see* Bierman, *The Implications to Accounting of Efficient Markets and the Capital Asset Pricing Model,* 49 ACCT. REV. 557 (1974) (investor reaction is irrelevant to establishing disclosure policies). Bierman reasons that in formulating accounting principles, policymakers should undertake to isolate those factors that measure "true earnings" or the firm's "intrinsic value." His approach is much like gauging the worth of forecasts by their relative accuracy because in both instances he seeks disclosure policies which offer the *best* measure of the firm's financial performance and position.

The optimal disclosure policy with respect to any single issue is far more encompassing than to consider what serves the information needs of information users. Demski, *Choice Among Financial Reporting Alternatives,* 49 ACCT. REV. 221, 227 (1974), reasons that the value of information can be measured by observation, but such observed behavior provides no insight into the information's social value. Demski's analysis, however, does not apply to financial forecasts, but rather to situations in which choices are being made between alternatives which embody the same information content. The policy regarding forecasts is a choice between outsiders's forecasts and those of managers which, as seen above, have different information contents because of the greater accuracy of management forecasts. As the body of users expands so that disclosure policy includes more than investors and includes creditors, consumers, labor representatives and the government, the problems in formulating a single coherent objective by which any disclosure practice is to be measured becomes impossible.

There is no method of selecting among social alternatives that is not dictatorial, but is Pareto-optimal, independent of irrelevant alternatives, and provides a complete, transitive, and reflexive

vestors considering whether to change their investment decision in response to the forecast. Accuracy implicates the reliability of the information contained in the forecast. Absent objective criteria or devices which can either corroborate the forecast or attest to qualities of its preparation, investors can only discount the forecast's information by the average error for all forecasts. This is particularly true because all evidence indicates that firms that forecast are not repeat players whose past record for accurate forecasts can serve to authenticate their current forecast.[21] The following section therefore reviews the contribution that existing authenticating devices make toward enhancing a forecast's reliability in the eyes of investors.

II. THE AUTHENTICATION PROBLEM

The SEC was originally hostile to the inclusion of financial forecasts in materials filed with the SEC because such information was believed inherently unreliable.[22] The SEC evaluated the question only in terms of the forecasts' accuracy. The forecasted amount invariably differed from the amount actually achieved and, more importantly, the cause for such difference could only be determined after the forecasted event's occurrence. The SEC did not believe that the forecast's preparation could be externally examined at the time of its issuance in a manner which would attest to its reliability. Hence, the SEC justified a strict prohibition on forecasts. Although the SEC has changed its position dramatically with respect to financial forecasts,[23] the problem of a forecast's authenticity has not changed. Of the several possible responses to this problem, none appears satisfactory.

Accountants have always been greatly concerned with their role in either the preparation or review of forward-looking information. Lack-

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ranking of the social alternatives. *See generally* K. ARROW, SOCIAL CHOICES AND INDIVIDUAL VALUES (2nd ed. 1963).

In formulating policy for disclosure to securities markets, the most important concern upon finding an item has information content is the cost associated with the information's production and dissemination. When, as is the case with financial forecasts, there is little cost, commentators typically conclude that the information should be disclosed. *See, e.g.,* Beaver, *What Should Be the FASB's Objectives?,* 136 J. ACCT. 49, 53 (Aug. 1973); Gonedes, *Efficient Capital Markets and External Accounting,* 47 ACCT. REV. 11, 16 (1972).

21. One study of 121 forecasting firms over a four-year period found that only four issued more than one annual earnings forecast. Jaggi & Grier, *A Comparative Analysis of Forecast Disclosing and Non-Disclosing Firms,* 9 FIN. MGMT. 38, 39 (Summer 1980).

22. *See supra* note 10.

23. *See supra* note 10.

ing the objective, completed events that are the linchpin for accountant involvement in other verified functions, such as the annual report, their involvement with financial forecasts places them in less familiar terrain.[24] Forward-looking information, however, is not entirely foreign to the accountant. For example, they frequently review management forecasts, but only as a means to better familiarize themselves with the many variables which interact within their audit of the company's operations.[25] Their involvement with financial forecasts is, therefore, relatively recent and unexplored. Their major contribution apparently will be questioning the assumptions on which any management forecast is premised.[26] The accountant's insight into the interactive financial, production and marketing forces for the individual firm well qualify them to detect an egregious *imbalance* among the forecast's assumption which seriously undermine the forecast's reliability. It appears, however, that such an awareness is likely to occur only in the most extreme cases. In other words, the essential value of the forecast is its communication of new information about the firm and its prospects, and the fact that management's assumptions resonate poorly with those of the accountant should not automatically negate the manager's assumptions. Management's insight is both unique and better than that of outsiders and appropriately deserves great deference. Accordingly, accountants demonstrate great deference to management forecasts, especially when management has enjoyed a past record of relative forecast or budget accuracy. If the attest function is to succeed, the accountants' attitude should be skeptical in all cases, regardless of the manager's past record. This, however, is not likely to be the case.

Beecher v. Able[27] demonstrates the role of a forecast's assumptions. In *Beecher*, Douglas Aircraft Company offered convertible debentures to the public through a registration statement that predicted that the com-

24. *See, e.g.*, Danos & Imhoff, *The Auditor and Financial Forecasts*, 151 J. ACCT. 104, 109-10 (June 1981). The accounting profession's fear is essentially that their involvement will cause investors mistakenly to attach certainty to the forecast's predicted outcome. Hence, there may well be an "over-authentication" problem. This appears to be an overstatement in view that any experience with auditor's involvement would not only show that certainty is not being attested to, but also that experience itself would be impounded into the discounting of the forecast announcement.

25. *Id.* at 107-09 & 111.

26. Danos & Imhoff, *Factors Affecting Auditors' Evaluations of Forecasts*, 21 J. ACCT. RESEARCH 473, 488 (Autumn 1983). Danos & Imhoff, *Auditor Review of Financial Forecasting: An Analysis of Factors Affecting Reasonableness Judgments*, 57 ACCT. REV. 39 (1982).

27. 374 F. Supp. 341 (S.D.N.Y. 1976).

pany would break even for the year.[28] Instead, the company reported a $52 million loss because of continuing materials and labor shortages related to the Vietnam War. The court found that the company's prediction assumed that these problems would be substantially overcome during the forecast period.[29] This assumption, however, was not disclosed in the registration statement. Like the break-even performance management predicted, Douglas never overcame labor and material shortages.

Beecher suggests that one response to the authentification problem is to require disclosure of the underlying assumptions of the forecast. Disclosure of a forecast's underlying assumptions is believed to allow investors to assess independently the forecast's reliability in light of other information available to them.[30] Douglas' assumption that it could overcome the problem of labor and material shortages is a clear illustration of the limited instances in which disclosures collateral to the forecast would improve the forecast's usefulness to investors. The assumption in *Beecher* not only was the dominant factor in the forecast's achievement, but also was not interdependent with other assumptions or events. Moreover, the assumption involved a matter within the capacities of the investment community to assess: the likelihood that labor and material shortages which were plaguing the industry as a whole would continue. The means to assess this variable were not solely within the domain of Douglas' management. It was an industry-wide phenomenon for which there was abundant public information.

Although *Beecher* underscores the protective benefits of disclosing assumptions along with the forecast, in most instances these benefits are problematic. The typical forecast assumptions are far more complex than that in *Beecher*.[31] As expected, several assumptions will be independent of all other assumptions. A larger group of assumptions is likely to exist which are interdependent with one another, but which have varying amounts of correlation. Each assumption's impact on the

28. *Id.* at 346.

29. *Id.* at 351-52.

30. SEC Guide 62, Disclosure of Projections of Future Economic Performance, 1 Fed. Sec. L. Rep. (CCH) ¶ 3822, provides that the SEC "believes that investor understanding would be enhanced by disclosure of the assumptions which in management's opinion are most significant to the projections or are the key factors upon which the financial results of the enterprise depend. . . ."

31. An excellent description of the possible problems posed by assumptions is contained in C. SCHNEIDER, FINANCIAL PROJECTIONS—PRACTICAL PROBLEMS OF DISCLOSURE, FIFTH ANNUAL INSTITUTE ON SECURITIES REGULATION 47, 59-63 (1974).

forecasted figure is of a different and indeterminate magnitude. The fact that many of the assumptions involve items for which outside investors lack sufficient referents against which the reasonableness of the assumption can be judges makes these distinctions even more difficult. Again, the informational advantage of managers and the social worth of their sharing that advantage through forecasts is evident by the vulnerability of the market to challenge the forecast's reliability. For these reasons, disclosure of assumptions improves the forecast's authenticity only when the investors can reasonably evaluate the assumptions' appropriateness.[32] That is, collateral disclosure of underlying assumptions can enable the market to assess independently the forecast's reliability, but usually when the assumption is one which links the forecast's achievement with the performance of the national economy or a particular industry. Items that are highly idiosyncratic to the individual firm would not in most cases prove useful to the user. Such collateral disclosures may even be dysfunctional because the assumption may remove the preparer's competitive advantage or share strategic planning with its competitors.

A third and final authenticating device is an affirmative undertaking of the forecast's preparers to monitor the forecast and to update or correct it whenever material differences appear likely.[33] Such an undertaking, in fact, is an affirmative duty of all forecasters. For example, in *Financial Industry Fund, Inc. v. McDonnell Douglas Corporation*,[34] an officer of Douglas Aircraft forecast that the company would earn $3.15 per share in its upcoming fiscal year.[35] Five weeks later, Douglas' president learned of continuing delays in production and commissioned a select team to investigate the problem and its impact on the company's earnings. The team soon determined that profits would not exceed $2.00 per share for the upcoming fiscal year. Douglas issued a press release, stating

32. *Id.* at 60.

33. Section 11(a) of the Securities Act imposes a liability for the failure to correct a registration statement up to its effective date. *See* Escott v. BarChris Constr. Corp., 283 F. Supp. 643, 659 & 678 (S.D.N.Y. 1968) (failure to correct filed registration statement to reflect changes in issuer's business). Rule 14a-9 of section 14(a) of the Exchange Act imposes a duty to correct material in a proxy statement. *See* Gould v. American Hawaiian Steamship Co., 351 F. Supp. 853, 868 (D.Del. 1972), *vacated and remanded on other grounds,* 535 F.2d 761 (3rd Cir. 1976). There, of course, is a more pervasive duty to correct and update under the antifraud provision of the Exchange Act. *See* Ross v. A.H. Robins Co., Inc., 607 F.2d 545 (2d Cir. 1979); Thomas v. Duralite Co., 524 F.2d 577 (3rd Cir. 1975). *See generally* Bauman, *Rule 10b-5 and the Corporation's Affirmative Duty to Disclose,* 67 GEO. L.J. 935 (1979).

34. 474 F.2d 514 (10th Cir. 1973).

35. *Id.* at 519.

simply that production difficulties were having an adverse affect on its earnings.[36] Matters continued to deteriorate, and the investigation continued, until Douglas refuted its earlier prediction.[37]

The effect of a duty to correct and update, as *Financial Industrial Fund* illustrates, is to mitigate the harm of a forecast that either was unreasonably prepared or has been interdicted by intervening forces which adversely affect its achievement. The update, however, benefits those who otherwise would have relied upon a stale forecast which because of a lapse of time and change in circumstances has become false. The update, however, does not assist those who acquired the forecasting firm's securities in the interval between the forecast and its update. As the facts of *Financial Industrial Fund* reflect, this can be a considerable interval of time. Moreover, because most price and volume changes associated with the forecast occur within a short time of its announcement,[38] the update does not protect the vast majority of traders who rely upon the forecast. Thus, the undertaking or obligation to proffer updates provides a measure of authenticity only to remote users of the forecast.

The duty to update, therefore, renders the same protection for remote users of financial forecasts as the prevalent liability standard for recklessly prepared forecasts renders to their users. Each source of liability is an authenticating device whose force comes from the liability it imposes upon those who either recklessly prepare the forecast or shirk the obligation to update the forecast when circumstances require it. In combination their contribution is likely to occur only at the margins of most forecasts and liability from either source therefore provides little additional assurance of the individual forecast's reliability.

The contribution of the three traditional responses to the financial forecast authentication problem is quite modest. Neither individually nor in combination do they hold much hope that the overall quality of a forecast will be improved in the eyes of the market. In each instance, the weakness of authenticating response has its source in the informational asymmetries which are central to the act of forecasting. The information base of accountants or investors is not as rich as that of the forecast's preparers. When accountants review the forecast or the investors consider the wisdom of any disclosed assumptions or later question whether management recklessly prepared the forecast, each operates at a grave

36. *Id.* at 520.
37. *Id.* at 517.
38. *See infra* note 53.

disadvantage: they lack sufficient information. The ultimate authenticating device, therefore, must be one which can overcome this information gap. It is worth considering whether and how management's informational advantage can be employed both to increase the frequency of forecasts and to improve their authentication.

III. THE CORPORATION'S INTEREST

Because stockholders are concerned with maximizing their share values, they are well advised to pursue incentive arrangements whereby their managers' discretionary choices are stimulated to have a favorable impact on the firm's market value. Voluntary disclosure practices can have such an effect because more publicly available inside information will lower the firm's systematic risk attributable to informational asymmetries between managers and stockholders. Therefore, in an asymmetrical market, stockholders should seek, to the extent it is efficient, arrangements that will reward their managers for disclosure practices which increase share values. Such an incentive would take the form of compensating managers, at least in part, for intertemporal changes in the firm's value.

Any managerial compensation schedule is an inherently complex arrangement.[39] Nevertheless, several basic features should be included. Management's bonus would be a percentage of the interperiod change in the firm's value. For example, assume a market is composed of only two types of firms, Type A and Type B. Type A firms will have lower risk in the upcoming fiscal period, t, than will Type B firms. However, each firm's managers are the only persons who know whether their firm is a Type A or Type B. Without any additional information, investors will value each firm by capitalizing the earnings of each firm by the average *average risk* category for all firms.[40] The effect of this is that Type A firms will be undervalued and Type B firms overvalued.

If the managers of Type A firms enjoy incentives that reward them for increases in the firm's value, they will strive to distinguish their firm by emitting a signal of their firm's unique characteristics. Absent a penalty

39. Professor Trueman has also found that among the important ingredients of an incentive schedule designed to increase voluntary corporate disclosures is the need to restrict the insider's trading prerogatives and to impose some penalty for false reporting. Trueman, *Motivating Management to Reveal Insider Information*, 38 J. FIN. 1253 (1983).

40. Akerlof, *The Market for "Lemons": The Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488 (1970).

for false signaling, managers of Type B firms could issue a similar signal and thereby garner the short-term gains of their misdeeds. If such abusive signaling occurred widely, the significance of the signal would be devalued. Hence, to preserve the value of the currency employed to distinguish Type A and Type B firms, the optimal compensation schedule will encompass more than changes in the firm's value during a single, short fiscal period. The schedule must necessarily include a form of *ex post* adjustment to penalize a manager who has falsely signaled his firm as a Type A firm. Therefore, if a manager perceives at time period t that their firms have Type A characteristics which will only be confirmed at the close of a fiscal period t, he will issue a forecast announcement at t and receive additional compensation. However, if at t a manager is unable to confirm his firm's Type A characteristics and, in fact, they are Type B firms, the penalty would be imposed so that in the *ex post* adjustment the manager minimally loses his gains garnered earlier at time t.[41]

The courts' treatment of "scalping" violations under the federal securities law suggests a type of manager incentive which will produce reliable forecasts that will assure their own authenticity. Scalping involves an advisor's or analyst's secret purchase of a company's stock just prior to recommending the stock to his client or investors generally. The Supreme Court in *SEC v. Capital Gains Research Bureau, Inc.*[42] held that an investment advisor who frequently purchased shares of companies prior to recommending them to his clients, without also disclosing his trading practices, violated the antifraud provision of the Investment Advisors Act of 1940.[43] The Court reasoned that if scalping were not prohibited, investment advisors might succumb to the temptation to recommend stocks whose characteristics were more likely to assure a quick and substantial price change following the recommendation.[44] Stocks of small corporations with fewer outstanding shares are particularly appropriate for scalping, because a slight shift in demand for a thinly traded stock will cause an unusually large change in its market price. More importantly, *Capital Gains* did not proscribe the advisor's secret purchase in advance of his recommendation. The advisor's breach was his failure to disclose his prior purchase of the recommended stock as

41. A mathematical representation of the important features for a compensation schedule designed to encourage voluntary disclosures is presented in the Appendix following this article.

42. 375 U.S. 180 (1963).

43. 15 U.S.C. §§ 806-1 to 6-21 (1982).

44. 375 U.S. at 196.

well as his intent to sell the shares after a rise in the market. The Court reasoned that such disclosure would enable investors to consider whether the advisor is serving two masters or only one, "especially, . . . if one of the masters happens to be economic self-interest."[45]

Scalping violations of the federal securities laws are easier to envision when prosecuted, as in *Capital Gains*, under the Investment Advisors Act because that Act is concerned with eliminating conflicts of interest between the advisor and his clients. Disclosure of the advisor's position in recommended stocks permits the client to evaluate more fully the disinterestedness of the advisor's recommendation. An increasing number of scalping cases,[46] however, have been brought under the antifraud provision of the Securities Exchange Act of 1934 against individuals who are outside the technical definition of an investment advisor.

Because the antifraud provision is not concerned with conflict of interests, its application to scalping emphasizes the informational value of the defendant's potential to scalp. In the leading antifraud case, *Zweig v. Hearst Corp.*,[47] Cambell, a financial columnist, purchased 5000 shares of ASI just prior to publishing a highly favorable column about the company. The day after the column's publication, Cambell sold 2000 of his ASI shares, thereby recouping his initial investment in all of the shares he purchased.[48] His trading practices in ASI repeated what he had done on prior occasions. Over a two-year period, Cambell purchased stock in 21 companies prior to publishing favorable columns about each and then sold the shares after the story's publication.[49] The plaintiffs in *Zweig*, stockholders of a corporation which ASI acquired, argued that Cambell's scalping had inflated ASI's market price so that the merger's terms appeared more favorable than if Cambell had disclosed his scalping scheme. The Ninth Circuit Court of Appeals held that Cambell's failure to disclose in his column his earlier investment in ASI and his intent to sell the

45. *Id.*

46. For cases in which section 10(b) of the Exchange Act and section 206 of the Investment Advisors Act are used interchangeably to reach scalping, see SEC v. Blavin, [1984-85 Transfer Binder] FED. SEC. L. REP. (CCH) ¶ 92,021 (6th Cir. 1985); *In re* Penny Stock Newsletter, [1984-85 Transfer Binder] FED. SEC. L. REP. (CCH) ¶ 83,722 (Dec. 19, 1984). Scalping practices can also subject a brokerage firm to censure by an exchange in which the firm is a member. *See In re* Smith Barney, Harris Upham & Co., [1984 Transfer Binder] FED. SEC. L. REP. (CCH) ¶ 83,656 (Aug. 15, 1984).

47. 594 F.2d 1261 (9th Cir. 1979).

48. *Id.* at 1265.

49. *Id.* at 1264 n.4.

shares after the column's publication violated the antifraud provision.[50]

Scalping may be restated to reflect the principles of the before-described incentive schedule. The practice implicates the advisor's motives in proferring the recommendation and therefore the authenticity of that recommendation. The advisor's failure to disclose his scalping plans misrepresents the most important feature of an agency arrangement, the agent's compensation schedule. The agent's compensation schedule allows outsiders to evaluate the information's authenticity, at least in part, by the disinterestedness of the advisor. The advisor who scalps reaps gains outside his agency compensation schedule independent of the worth of his recommendation. Moreover, these nonscheduled gains erode any penalty the schedule may contain for poor performance. The effect, therefore, of the federal securities laws' application to scalping is to police the agency arrangement by compelling what the parties would have agreed to if they could have bargained economically: full disclosure of the agent's interest and gains in the subject matter of the agency relationship.

To summarize, the violation in scalping cases is the nondisclosure of the advisor's purchase and intent to sell after the recommendation is published. Merely purchasing securities researched for a publication by itself does not require prompt disclosure absent a recommendation. A recommendation, therefore, is the *sine qua non* of a scalping violation.[51] Prior to a recommendation, the advisor's isolated purchase is devoid of informational content. After a recommendation is proffered, the advisor's trading activity, past and future, has great meaning to investors assessing the recommendation's authenticity. Moreover, investors, if informed of the advisor's purchase of the recommended security, will react more positively to the recommendation if the advisor undertakes not to change his ownership before notifying the investor. Such an undertaking ties the advisor's recommendation to the interests of the advisee in that recom-

50. In fact, the duty imposed on Cambell was even broader than this because the court extended the duty not only to those who read his column, but also to all traders in the recommended company's stock. The recommended stock in *Zweig* was American Systems, Inc., and the plaintiffs were stockholders of Reading Guidance Center, Inc., which was being acquired by American Systems for a total price of $1.8 million. The exact number of ASI shares to be issued in the merger was determined by the market price of the stock during the first five trading days of June, 1969, the period following Cambell's column. Hence, Cambell's disclosure obligation was important for the market to price efficiently the shares of ASI. *Id.* at 1269-71.

51. *See* Fleischer, Mundheim, & Murphy, *An Initial Inquiry into the Responsibility to Disclose Market Information,* 121 U. PA. L. REV. 798, 828-35 (1973).

mendation's authenticity. Under the above compensation schedule, the advisor's undertaking not to sell before a stated time exposes the advisor to a "penalty" of losing value to any market price decline if his advice is wrong.

Insider trading regulation can be similarly justified. Just as disclosure of the advisor's trading design for a recommended stock affords insight into the recommendation's authenticity, it may be reasoned that permitting managers to trade in their firm's stock may encourage them to engage more frequently in voluntary disclosures, and also that disclosure of the insider's trading position will enhance each disclosure's authenticity. Hence, by first stimulating greater corporate disclosures and, second, improving the authenticity of those disclosures, the corporate interest is thereby served by reducing the firm's cost of capital because of the investor's favorable reaction to such heightened and improved disclosures. With this interest in mind, regulation of insider trading becomes a legitimate corporate objective. It serves to harness the insider trading activity to fulfill the corporation's desires to stimulate voluntary disclosures and to improve the authenticity of those disclosures.

IV. DISCLOSURE INCENTIVE: THEORY MEETS PRACTICE

The act of voluntarily disclosing information, particularly the issuing of a financial forecast, fits nicely into the incentive compensation schedule described above. That is, evidence exists that supports the belief that firms seek to distinguish themselves, as did the Type A firms above, by releasing financial forecasts. Moreover, a market-based financial gain secured by the forecast announcement guides, at least partially, management's incentive to release such a forecast. Finally, there is reason to believe that a market-based penalty also exists if the forecast is improperly proffered.

All studies of financial forecasts have found that investors alter their assessments of the firm's worth in response to financial forecasts, thus confirming the informational value of management forecasts.[52] The significance of such studies lies not in their confirmation of what many may

52. *See, e.g.*, Jaggi, *A Note on the Information Content of Corporate Annual Earnings Forecasts*, 53 ACCT. REV. 961 (1978); Foster, *Stock Market Reaction to Estimates of Earnings Per Share by Company Officials*, 11 J. ACCT. RESEARCH 25 (1973); Gonedes, Dopuch & Penmand, *supra* note 19; Patell, *Corporate Forecasts of Earnings Per Share and Stock Price Behavior: Empirical Tests*, 14 J. ACCT. RESEARCH 246 (1976). For example, Patell, found a significant change in the price of securities during the week that management released its forecast.

consider the obvious, but in their revelation that the market reacts significantly and positively even though management forecasts can be considered "bad news" because the forecasted amount is below what investors could have reasonably extrapolated from other sources. Significant price and volume changes are associated with a forecast announcement. The price change is positive, even though the forecasted amount is below that anticipated by investors prior to management's announcement.[53] The market's counterintuitive positive response to the so-called "bad news" forecasts can only be explained in terms of the concurrent message the act of forecasting signals.[54] An understanding of this phenomenon begins with a consideration of the properties of firms releasing financial forecasts.

The cause for the abnormally positive change in return associated with a forecast's announcement is not known, but may be attributed to the usual information content involved with the *act* of issuing a forecast, as distinguished from the forecasted amount. Because companies are not required to offer financial forecasts, the self-selecting feature of forecasting ensures that those that do forecast have unique characteristics. These characteristics support the belief that the act of forecasting is an important form of signaling engaged in by managers to increase their firm's market value. This value enhancement occurs importantly by reducing the firm's riskiness in the eyes of analysts. In this regard forecasts are

53. Penman's study of investor reaction to 1,188 financial forecasts not only supports the information properties of financial forecasts, but also offers interesting insights into the stock price reaction to "good news" and "bad news" forecasts. Penman, *An Empirical Investigation of the Voluntary Disclosure of Corporate Earnings Forecasts,* 18 J. ACCT. RESEARCH 132 (1980). By using daily data, Penman offers insight into the markets response each day of the forecast's announcement. As in the case of Patell's study, *supra* note 52, Penman found no significant difference in investor reaction to forecasts which were greater than could be extrapolated from past reported performance and forecasts which were significantly below those that could have been so anticipated. *Id.* at 157.

54. A. SPENCE, MARKET SIGNALING 1 (1974). Signaling arises when there is uncertainty about the reliability of information. Information users may therefore rely upon certain associations to provide the requisite basis for their decisions. For example, Spence illustrates how employers may employ information about an applicant's educational attainments, job experience, race or sex to access the applicant's probable productivity. In this way, these characteristics become part of the applicant's information outputs just as the applicant's unsupported statement that he is a "hard worker" is such an output, but one not as objectively verifiable. Spence's signaling model is adapted to the multi-period forecast-disclosure setting in Penman, *Corporate Forecast Disclosure, Substitute Information, and the Market for Information,* Chapter II (Ph.D. dissertation, Univ. of Chicago, 1978). Forecasts are not the only type of voluntary disclosure which can be attributed to the signaling hierarchy that develops when firms with distinct qualities recognize that unless a message is emitted that favorable quality will not be associated with the firm. *See, e.g.,* Ronen & Livnat, *Incentives for Segment Reporting,* 19 J. ACCT. RESEARCH 459 (1981).

most frequent among firms which enjoy low fluctuations in year-to-year earnings.[55] Higher risk firms, *i.e.*, those with great earnings variability, are less likely to proffer a forecast.[56] Also, forecasting firms have lower earnings variability in the fiscal period after their forecast than do comparable nonforecasting firms.[57] Moreover, managers are more likely to forecast if earnings are increasing than when earnings are declining.[58] Thus, there is a greater frequency of forecasting during periods of growth in the national economy than where there is a recession.[59] In sum, the forecast is a means for managers to communicate their optimism of the firm's position and future operations in a way that causes investors to associate the forecasting firms in a less risky category than if the same firm did not engage in forecasting. In terms of the earlier two-type firm illustration, the act of forecasting distinguishes the forecasting firm as a Type A firm.

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55. *See* Imhoff, *supra* note 18 at 844 (paired firms not issuing forecasts had greater earnings variability than forecasting firms, but that forecasting firms had greater systematic risk than the composite systematic risk of firms comprising the Standard and Poors Industrial 500 Index). Cox, *Further Evidence on the Representativeness of Management Earnings Forecast,* 60 ACCT. REV. 692 (1985), however, found that forecasting firms did not have greater systematic risk than nonforecasting firms. The reason for firms with lower earnings variability being the most frequent forecasters may well be management's aversion to forecasting an amount that will differ materially from the level ultimately achieved. In this regard, consider that more forecasts are offered by public utilities which also have the best record for accuracy. McDonald, *supra* note 7, at 510; Patell, *supra* note 52, at 251-52.

56. Jaggi & Grier, *A Comparative Analysis of Forecast Disclosing and Non-Disclosing Firms,* 9 FIN. MGMT. 38 (Summer 1980), found that growth in earnings was not a variable that distinguished forecasting from nonforecasting firms. As between sets of firms which both enjoyed high growth rates, those with the lowest expected future earnings variability proffered forecasts whereas those whose earnings variability would continue to be great in the future did not forecast. *Id.* at 42-43. *See also* Cox, *supra* note 57, at 698. Jaggi & Grier's findings are disturbing because reliable forecasts would be most helpful to investors for firms with the greatest earnings variability. However, the volatility of their earnings make their own predictions most problematic. It may be that managers of such firms are themselves unable to forecast future performance. Related to earnings variability is firm size with larger firms having less variable earnings. Daily, *The Feasibility of Reporting Forecasted Information,* 46 ACCT. REV. 686 (1971), is alone in finding that firm size is unrelated to forecast error. The greater frequency of forecasts among firms with lower expected variability also suggests that managers are averse to forecast an amount that will materially differ from the level actually achieved, most likely because of the market's penalty for materially misleading signals. *See infra* text accompanying notes 66-72. Hence, when there is much less risk of a material deviation of actual from the level forecast managers are more likely to forecast.

57. *See* Jaggi & Grier, *supra* note 56.

58. *See* McDonald, *supra* note 17, at 505.

59. *Id.* Furthermore, the degree of management optimism in overpredicting is related to general economic conditions. Gray, *The Role of Forecast Information,* in INVESTMENT DECISIONS IN PUBLIC REPORTING OF CORPORATE FINANCIAL FORECASTS 28 (1974).

Further evidence of managers' trading practices in connection with their forecast announcements brings voluntary disclosure within the hypothesized incentive compensation schedule. In what some may call resourcefulness, managers appear to have systematically developed their own compensation schedule when forecasting their firm as Type A firms. In a study of insider trading activity before and after forecast announcements, insiders were found systematically to time their purchases and sales in relation to forecast announcements.[60] They were thereby able to earn abnormal returns on their trading.[61] Moreover, the strength of the correlation between the frequency of insider purchases and their forecasts was directly related to the forecast's ultimate impact on the security's market prices.[62] Insiders, therefore, not only are privileged in their ability to know when a forecast will be announced, but also are excellent judges of whether an upcoming forecast announcement will cause a material increase in the stock's price.

Related to the empirical evidence of managers' propensity to purchase shares in advance of their forecast announcement is the question of what variables skew forecasts so that a far greater number of forecasts are of "good news" rather than "bad news."[63] Although management's incli-

60. Penman, *Insider Trading and the Dissemination of Firm's Forecast Information,* 55 J. BUS. 479 (1982). Studies of other corporate announcements have also found they are preceded by significant insider trading activity. *See* Elliott, Morse & Richardson, *The Association Between Insider Trading and Information Announcements,* 15 RAND. J. ECON. 521 (1984); Keown & Pinkerton, *Merger Announcements and Insider Trading Activity: An Empirical Investigation,* 36 J. FIN. 855 (1981).

61. Penman, *supra* note 60, at 485-93. In this respect, there have been several reported instances in which an alleged misleading favorable forecast has been accompanied by an insider selling his corporation's stock. *See, e.g.,* Beldman v. Goldman, 754 F.2d 1059 (2d Cir. 1985).

62. Penman, *supra* note 60, at 485-93.

63. *Id.* at 484. *See also* studies cited *supra* note 53. Indeed, management's bias toward early reporting of good news announcements is well-documented. *See, e.g.,* Chambers & Penman, *Timeliness of Reporting and the Stock Price Reaction to Earnings Announcements,* 22 J. ACCT. RESEARCH 21 (1984) (annual reports bearing good news are released earlier than are annual reports which disclose bad news); Patell & Wolfson, *Good News, Bad News, and the Intraday Timing of Corporate Disclosures,* 57 ACCT. REV. 509(1982) (bad news systematically delayed, whereas good news is released earlier). Indeed, there is something of a hierarchy based on the time in which reports are issued so that when quarterly reports are studied in terms of both their good news and bad news qualities as well as their timeliness, it is found that bad news reports which are released early carry less negative stock price reaction than do bad news reports that are released late. Kross & Schroeder, *An Empirical Investigation of the Effect of Quarterly Earnings Announcements Timing on Stock Returns,* 22 J. ACCT. RESEARCH 153 (1984). *See generally* Givoly & Palmon, *Timeliness of Annual Earnings Announcement: Some Empirical Evidence,* 57 ACCT. REV. 486 (1982); Niederhoffer & Regan, *Earnings Change Analysts' Forecasts and Stock Prices,* FIN. ANALYSTS J. 65 (May-June 1972); Lurie & Pastena, *How Promptly Do Corporations Disclose Their Problems?,* FIN. ANALYSTS J.

nation to report the good and to conceal the bad as long as possible may be so dominant that any economical financial incentive cannot overcome it, current securities law rules prohibits managers from creating their own market-based incentives to release bad news. Section 16 of the Securities Exchange Act prohibits insiders of large public corporations from short trading in their corporation's registered securities.[64] The empirical dominance therefore of "good news" forecasts may be seen as reflecting managers' compliance with the provisions of section 16 so that they lack sufficient incentives to release unfavorable news.[65]

Evidence also suggests that securities markets impose their own penalties when managers proffer a false signal of a firm's future vitality. Although this question remains to be examined in the context of forecast announcements, in a related area of market signaling, the announcement of a stock dividend,[66] ample evidence exists of the market's response to false signaling. The financial significance of a stock dividend announcement is widely ascribed to the same message as that suggested above for a financial forecast, namely a signal of management's optimism for the firm's continued extraordinary financial performance.[67] The market in-

55 (Sept.-Oct. 1975); Pastena & Ronen, *Some Hypotheses on the Pattern of Management's Informal Disclosures,* 17 J. ACCT. RESEARCH 550 (1979). The proclivity to conceal "bad" news has fueled the SEC's current active enforcement efforts directed toward "cooked" books. *See* Hudson, *Fidelity S&L Disclosures Faulted by SEC as Giving 'Impression of Business as Usual',* Wall St. J., Aug. 2, 1982, at 34, col. 2.

64. 15 U.S.C. § 78p (c). Carlton & Fishel, *supra* note 13, at 893-94, reason short trading may encourage executives to make *superior* corporate decisions.

65. *See* Penman, *supra* note 60, at 484.

66. The naive investor often uses the expression stock dividend and stock split interchangeably. This confusion has given rise to the accounting profession's promulgation of guidelines for differing accounting treatment for each depending on the expected reaction to investors. *See* ARB No. 43, Ch. 7, Stock Dividends and Stock Split-Ups (A.I.C.P.A. 1953). The accountants presume that share increases less than 20-25% of the affected shares are presumed to be a stock dividend for which the corporation's retained earnings must be capitalized in an amount equal to the shares' market value. This position is based on the view that investors react positively to announcements of stock dividends because they view them as the functional equivalent to cash dividends, but view the larger percentage increase of a stock split as merely an increase in the shares outstanding with no effect on shareholder wealth. Leading event studies do not support the distinctions the accounting profession draws between its treatment of stock dividends and stock splits. *See infra* note 67 and accompanying text. *See generally* W.G. LEWELLEN, THE COST OF CAPITAL 113-17 (1969).

67. One of the most celebrated event studies found a significant increase in the returns for firms announcing a stock split (defined as an issuance of at least five shares in exchange for four outstanding shares), which was lost in the months following the announcement by firms which *failed* to increase their overall dividends. Fama, Fisher, Jenson & Roll, *The Adjustment of Stock Prices to New Information,* 10 INT'L ECON. REV. 17 (1969). *See also* Chottiner & Young, *A Test of the AICPA Differentiation Between Stock Dividends and Stock Splits,* 9 J. ACCT. RESEARCH 367 (1971);

terprets the stocks dividend announcement as presaging an overall increase in dividends. Such an increase is doubly important because in Litner's classic study[68] of managerial discretion over company dividends, he found that managers will increase dividends to a new level only when they believe the firm's future earnings are so certain that the firm will be able to maintain the new dividend under all economic conditions.

Firms that announce stock dividends are characterized by extraordinary rates of return in the months prior to the announcement.[69] Accompanying the above average returns for these firms is increasing systematic risk in the months prior to the announcement.[70] The increasing risk for the firm reflects the market's growing uncertainty whether, and for what duration, the firm can continue to sustain its extraordinary returns. The market's reaction to the stock dividend announcement confirms this explanation: the announcement is followed by a material decline in the announcing firm's systematic risk,[71] suggesting that uncertainty regarding the firm's future prospects is alleviated with the announcement of a stock dividend. The stock dividend announcement does not always occur at the same time that the firm's prospective cash dividend is declared.

Examination of the market's response to firms whose managers ultimately *fail* to increase dividends after an earlier declared stock dividend, a false signaling case, reveals a market-based penalty for false signaling. When dividends are not increased after an earlier stock dividend an-

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Foster & Vickrey, *The Information Content of Stock Dividend Announcements,* 53 ACCT. REV. 360 (1978).

68. Litner, *Distribution of Income of Corporations Among Dividends, Retained Earnings and Taxes,* 46 AM. ECON. REV. 97, 99-103 (1956), found that once dividends have been increased, management of publicly-held corporations reduce dividends only with great reluctance and then the reduction is made only under the most exigent circumstances. Importantly for present analysis is that forecasts of earnings elicit an even stronger reaction from the market than does management signaling its optimism through an increase in dividends. *See* Penman, *The Predictive Content of Earnings Forecasts and Dividends,* 38 J. FIN. 1181 (1983). This strength of a forecast announcement vis-a-vis dividend announcement may be due to the noise that the latter contains. For example, dividend increases which include an increase in the percentage of earnings being distributed, the so-called dividend payout ratio, are greeted less enthusiastically by the market than a dividend increase that does not increase the payout ratio. Divecha & Morse, *Market Response to Dividend Increases and Changes in Payout Ratio,* 18 J. FIN. & QUANTITATIVE ANALYSIS 163, 168 (1983). This differing treatment may be attributed to the differing tax treatments between earnings which are retained in the firm and thereby add value (and which are ultimately taxed at the preferential capital gains rates) and dividends which are taxed at higher ordinary income rates.

69. Bar-Yosef & Brown, *A Reexamination of Stock Splits Using Moving Betas,* 32 J. FIN. 1069 (1977).

70. *Id.*

71. *Id.* at 1072.

nouncement, the firm's systematic risk increases and remains at that level for a significant period of time.[72] The market's disproportionate response after concluding that a stock dividend announcement was a false signal of financial vigor and stability can therefore be seen as a penalty similar to that captured in the earlier described compensation schedule. The market's reaction which creates this penalty appears particularly well-advised. After the false signaling, the firm's variable earnings record continues and is exacerbated by management's apparent willingness to signal falsely.

The above empirical evidence is consistent with the suggested compensation schedule. Managers can and presumably do view it as advantageous to offer forecast announcements, and systematically share in their firm's increased value following the announcement through trading in advance of the forecast.[73] Because managers dislike increases in their firm's systematic risk, they have an incentive to signal their optimism and to do so honestly. Otherwise their firm will encounter higher rather than lower cost of capital. Because these effects benefit stockholders, everyone would benefit from harnessing the manager's discretion in a compensation schedule which formally seeks these objectives. Indeed, private contractors would see it is to their advantage to go even further than the empirical data marshalled above suggests. They would include in their agreement a means by which the managers would authenticate their fore-

72. *Id.* at 1072-73. Similarly, firms which either omit or significantly cut their dividends thereafter reflect greater systematic risk due to investor negative reaction to this signal. Dielman & Oppenheimer, *An Examination of Investor Behavior During Periods of Large Dividend Changes,* 19 J. FIN. & QUANTITATIVE ANALYSIS 197, 203 (June 1984). Correlatively, firms that resume dividends or increase their dividends materially reduce their market risk. *Id.*

73. *See* Downes & Heinkel, *Signaling and the Valuation of Unseasoned New Issues,* 37 J. FIN. 1 (1982) (entrepreneuer's purchase of firm's stock not only signals his faith in firm's future, but also reduces the frequency of his deviations from the goal of maximizing share values); Leland & Pyle, *Information Asymmetries, Financial Structure and Financial Intermediation,* 32 J. FIN. 371 (May 1977) (insiders' investment in own projects are signal of project's soundness). In Gilson & Kraakman, *The Mechanisms of Market Efficiency,* 70 VA. L. REV. 549 (1984), investor knowledge of insider trading practices is referred to as a "derivatively informed trading mechanism" and one of the informational sources which guide market efficiency. They express a view similar to that above in stating that the question is not whether to permit insider trading but whether derivatively informed trading mechanism can be made to operate more efficiently. *Id.* at 629-32. They point out that under current practices investors learn of the insiders trading through reports filed under section 16 of the Exchange Act only after the insiders have traded. They suggest a solution different from above in that they recommend that insiders announce their intention to trade a reasonable time in advance of their trading. Professors Gilson and Kraakman, however, did not consider the role of insider trading in terms of either encouraging voluntary disclosure or authenticating disclosures which may have caused them to alter somewhat the timing of the insider's trading.

cast announcement with a commitment not to reverse their trading positions until the end of the forecasted period after reporting the level of activity actually achieved.[74] Thus, the parties would restrain the manager's ability to change his trading position prior to the forecasted event's occurrence. This restriction serves the dual function of authenticating the announcement and penalizing false signaling.

V. INCENTIVES, OPPORTUNITIES, AND IMPLICATIONS

The above-described data, even though consistent with the proposed incentive schedule, is not at this point complete enough to compel the schedule's adoption. Many more questions must be answered. For example, there are more instances of forecast announcements that are not accompanied by the manager's trading than those in which the manager's trade prior to the forecast's release. Thus, the forecast may well present only an opportunity for a private gain, but that prospect of gain may not be the force behind the forecast's preparation or release. Also, market-based incentives may exist that are more efficient than insider trading which provide the necessary incentives for managers to forecast. Moreover, firms that forecast are consistently among firms characterized by future levels of profitability and risk that are unique vis-a-vis the market as a whole. These are factors that not only are independent of the managers' incentive schedule, but also appear to dominate over the manager's personal incentive schedule. Firms whose managers profit directly from increases in the value of firm's shares, but which lack the buoyant qualities that predominate among forecast firms, probably will still not issue forecasts. Thus, licensing managers to purchase secretly in advance of a forecast may well have no impact on the frequency of financial forecasting across firms generally.

Quite independent of the impact of insider trading on the frequency of financial forecasting is the question of whether and to what extent disclo-

74. In this way, disclosure of the insider's trading decision can itself characterize forecasts as "good" or "bad" news. For example, in Golden v. Belden, 754 F.2d 1059 (2d Cir. 1985), the court was faced with whether a forecast of a 40-50% rise in sales was material in view of the fact that the predicted increase was significantly below that in each of the prior four years. An insider's disclosure of his decision to purchase shares in reliance upon the forecast is consistent with a "good" news characterization of the forecast. However, in *Golden,* the corporation's vice-president sold a significant number of shares following the forecast. His trading served no authenticating function, but only signaled his belief that the current price was a good one. Had his intent to sell been disclosed in the forecast announcement, the market's response is not likely to have been as strong as it was and, of course, the vice-president would have received less for his shares.

sure of their trading will in fact authenticate the forecast. As the scalping cases demonstrate, disclosure of the advisors' trading practices is intended to enable investors to judge the recommendation in light of all of its preparer's possible incentives. An undertaking not to change the preparer's trading position in the affected security until a stated event, the passage of the forecast period, reveals a great deal about its preparer's faith in the forecast or recommendation. However, it remains unexplored in the financial forecast area whether other market forces are such that they provide ample authentication of the forecast. That is, other managerial compensation devices which are tied to the firm's financial performance or changes in value of its shares may make the forecast's preparers' additional undertakings superfluous.

Related to the authentication question is whether it is necessary to license inside trading for both "good' and "bad" news reports.[75] In this context there is a well-documented reluctance by managers to release "bad" news. To be sure, so-called "bad news" forecasts are issued. These forecasts earn their pejorative title, however, not because they forecast a loss, but rather because the forecasted amount is less than would be predicted based upon the firm's past performance. A truly "bad news" forecast, one which projects a loss, is unlikely to overcome the manager's other incentives which cause them to delay such a negative report on the firm and managers' performance. Moreover, authentication of unexpected "bad news" is not a problem. In fact, the market responds more quickly to unexpected "bad news" than it does to "good news,"[76] suggesting that the report's content itself provides its own authentication. This authentication lies in the verified practice of managers not to report such "bad news" if it can be avoided. Thus, on the basis of available evidence it hardly appears justified to consider section 16(c)'s of

75. Negative soft information is generally delayed until the information's release is considered an inevitability. Negative news is more frequently released in the months just prior to the close of the firm's fiscal year. This is explained not by the manager's incentive compensation schedules, but rather by managers' feeling that the information's disclosure is inevitable in view of the upcoming audit by its independent accountants. *See generally* Pastena & Ronen, *Some Hypotheses on the Pattern of Management's Informal Disclosures,* 17 J. ACCT. RESEARCH 550 (1979).

76. *See* Joy, Litzenberger & McEnally, *The Adjustment of Stock Prices to Announcements of Unanticipated Changes in Quarterly Earnings,* 15 J. ACCT. RESEARCH 207 (1977) (whereas prices respond slowly to quarterly earnings announcements that exceed expected earnings by 20-40%, the response is quite rapid when quarterly earnings decline by 20-40% from the expected level). A case in point is the quick and significant decline in Warner Communication, Inc. when it predicted earnings would be substantially below the earlier predicted level. Landro, *Warner Says 8 Atari Unit Executives Sold Shares Before Report Spurred Stock Slide,* Wall St. J., Dec. 27, 1982, at 3, col. 2.

the Exchange Act prohibition against short-selling as the major impediment to management forecasting a future loss.

The final implication of licensing insider trading for the narrow purpose of encouraging and authenticating financial forecasts is the accompanying necessity to prohibit strictly insider trading in all other connections. If a market-based incentive schedule is to have its twin impacts of encouraging and authenticating forecast announcements, an unqualified need exists to restrict managers from seeking gains off that schedule. This need is based on the realization that if managers can freely trade on insider information which arises through no acts of their own, their incentive to produce value increasing events, such as a forecast, is reduced. Moreover, if the manager can secretly sell more shares than the announced forecast disclosed he purchased in reliance upon the forecast, the authenticating contribution of his purchase is completely eroded.[77] Insider trading must therefore be prohibited except when it serves the corporate interest, if the manager's actions are to be understood in terms of his public incentive structure.

77. Any linkage of the insider trading practices with the larger corporate aims of improving voluntary disclosure practices must deal with the reality that insiders will not comply fully with the detailed restrictions and concomitant record keeping such a linkage necessitates. The wide-ranging abuses under § 16's reporting requirements do not support the belief that insiders will fulfill their obligations. *See* 16 SEC. REG. & L. REP. (BNA) 1248 (July 27, 1984); Hudson, *Many Directors Ignore SEC Filing Rule on Stock Trades Nader Study Concludes,* Wall St. J., Dec. 5, 1983, at 36, col. 3.

APPENDIX
INCENTIVE COMPENSATION SCHEDULE AND MARKET SIGNALING

The following is undertaken to describe the conditions which enable forecasting to become a signal. The illustration begins with the assumption of a simple economy in which only two types of firms exist: Type A firms and Type B firms, wherein the return between the beginning of the time period, t_o and the end of the time period, t_1, of each type of firm is a and b, respectively, with $a>b$. The returns, whether a or b, to be achieved during the fiscal period are known at t=o only by the managers of the respective firms. For additional simplicity, the market for each firm's return is assumed to be risk neutral. Therefore, if investors could distinguish A and B firms, their respective values V_o^A and V_o^B at time 0 would be

$$V_o^A = \frac{a}{1+r} > V_o^B = \frac{b}{1+r}$$

where r represents the discount rate equal to the riskfree rate of interest.

If the investors are unable to distinguish at t_o or t_1 type A and B firms, all firms will be valued equally as a single indistinguishable group. Investors will capitalize the *average returns* for all firms in valuing any firm. Because of such averaging process by investors necessitated by their inability to distinguish between the two firms, the value placed on A firms will be less than their "true" value and the value placed on B firms greater than their "true" value.

Implicit in the assumption that managers of the firms know the returns, *i.e.*, whether a or b of their respective firm at t_o is the assumption that a value for the firm at t_o and t_1 can be reasonably estimated. This assumption is not a surprising one. For example, at the end of the fiscal period, at t_1 a firm reports its earnings to date, and in an efficient capital market the stock's price impounds this information so that measurement of the change in the firm's value during the fiscal period, and hence the return achieved by its owner over that fiscal period, can then be determined. The market's past pricing movements allows managers to make reasonable estimates of the stock's price following announcement of its earnings for a fiscal period. The magnitude of such changes is a joint result of the change in a firm's performance from that of a prior period and the extent the announcement differs from the news anticipated by the market from other sources or corporate announcements.

Managers of both Type A and Type B firms are assumed to be com-

pensated by an incentive schedule which, among other features, increases their compensation proportionately to increases in the firm's value in security markets. This assumption offers the incentive for the managers of Type A firms to distinguish their firms from Type B firms with the objective of seeing their firms' securities priced in the market so that $V_o^A > V_o^B$. Because the value of each type of firm can be objectively verified at t_1, Type A managers have an incentive to identify their firm prior to t_1, only if they prefer near to later enjoyment of their compensation.

If managers do not prefer the near term enjoyment of their compensation they can merely wait until the actual results are achieved to realize their compensation, such as through announcement in the annual report compelled under federal or state law. The condition that managers prefer near term enjoyment of their compensation is therefore an important one for explaining the incentive driving management to disclose at t_o that their firm is a Type A firm. Forecasting at t_o, the firm's return as *a* for the upcoming fiscal period, results in an increase in the firm's value and ultimately facilitates management realizing a proportionate share of that gain through their compensation schedule. Absent a forecast, managers must await announcement of the actual return achieved at t_1.

Absent some further clarifying information regarding management's compensation schedule, moral hazard renders direct statements by Firm A managers to the effect that they are Type A firms ineffective; Firm B managers could give the same statement. Such a response by both Type A and Type B firms' managers will return the stock-valuing process at t_o to the position where investors are compelled to capitalize the average expected returns for *all* firms (Type A and B) when valuing any firm's security. One method to avoid this difficulty is to assume that the managerial compensation schedule is far more encompassing than compensating the manager for increases in the firms' value. Proportionate sharing in *declines* in the firm's value must also be included. And as will be seen, investors must be aware of the compensation schedule's terms if effective signaling is to take place.

An outline of each manager's compensation (M) schedule is

$$M_{o+1} = y \begin{pmatrix} V_1 \text{ if } V_1 \geq F \\ V_1 - P \text{ if } V_1 < F \end{pmatrix} - V_o$$

where V_o and V_1 are the respective values of the firm at times 0 and 1; P is the penalty imposed if the forecast of value of the firm, F, at time = 1

is less than the actual value of the firm; and y is the nonnegative percentage of the manager's share in a change in the value of the firm between time periods. Thus, Firm A managers forecasting that they are Type A firms, so that subsequent actual performance proves the forecast to be correct, reap at t_o a proportionate share, y, of their gain. Necessarily, this compensation schedule must have certain retrospective features. To wit, comparison of F to V_1 can only be made at $t=1$ and if $F>V_1$ the gains garnered through the false signal will be recouped from the manager through the penalty imposed upon the manager. At the same time, the compensation schedule must include increases in value at $t=0$ by the forecasting of V_1. Simply, the compensation schedule begins by conferring upon managers their share of the firm's change in value at the moment a forecast is impounded in the price of the firms' security and extends until the actual results for the fiscal period are so that V_1 is known. This allows both the manager's compensation to be enjoyed *ex ante*, but equally important, permits an *ex post* settling up in the event of "false" forecasting.

The compensation schedule must contain a penalty provision to remove the incentive to represent falsely Type B firms as Type A firms. Otherwise a Type B firm manager may enjoy the interest free use between $T=0$ and $T=1$ of the differences in value between Type A and Type B firms through falsely representing his firm to be a Type A firm. Absent the penalty imposed in the *ex post* settling up, only the managers' proportionate share, y, of the increase in the firm's value due to the false statement would be recouped. Such a recovery does not include the utility the manager obtained during the period between t_o and t_1 through enjoyment of the incremental compensation obtained falsely.

Upon the above compensation schedule being both established and understood by managers and investors, a signaling equilibrium occurs. Firm A managers forecast their V_1 values at 0 and reap the immediate enjoyment awarded under their compensation schedule. Since they reap no reward by deferring their compensation and prefer the immediate enjoyment of any compensation due them, the above compensation schedule offers a powerful incentive to forecast V_1^A at $t=0$. To be sure, Type B managers may also forecast their V_1^B at $t=0$. If that is equal to V_o^B there is no gain, and hence, no incentive under the compensation schedule to forecast falsely. Type B managers may falsely forecast at $t=0$ that their value at $t=0$ will be V_1^A. The investors, unable to distinguish their false forecast from a true forecast will respond uncritically. But Type B

managers will in addition to being required to return their excessive share of the increase in the firm's value attributable to the false signal at $t=0$, also incur the penalty which will erode the near term advantage of the false statement.