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Discussant's Response to Some Thoughts on Materiality

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In addition to it being a real pleasure to be here at Kansas and to have the opportunity to exchange ideas with you, I am particularly honored to have the distinction of discussing the paper by Ken Stringer. I know of no other individual who is more responsible for moving the technical aspect of audit practice along more than Ken. I suspect that Ken would be the first to admit that progress is not always achieved without a few detours along the way. I think we would all acknowledge that without taking a few side trips down these unchartered roads, life would become static and dull. My remarks today center on the proposition that once again Ken is moving us in the right direction, but not necessarily along the four-lane. My remarks today will be divided into issues related to the paper and ideas on materiality generally.

The Paper

The concept of materiality is a threshold concept that relates to the users of information who make a myriad of decisions. In our society, a major group of these decisions are made by investors who buy, sell or hold securities based on this information. We, as accountants and auditors, are interested particularly in the role that financial statements play in that set of information. Society gives us general direction in carrying out our role as auditors. An indication of some of this direction is evidenced in the following excerpts.

The term "material," when used to qualify a requirement for the furnishing of information as to any subject, limits the information required to those matters about which an *average prudent investor* ought reasonably to be informed. *Regulation S-X, Rule I-02*. (Emphasis added.)

. . . A fact which if it has been correctly stated or disclosed would have *deterred or tended to deter* the *average prudent investor* from *purchasing* the securities in question. *Escott, et al. v. BarChris Construction Corporation*. 283 F. Supp. (S.D.N.Y.) 849 (1968). (Emphasis added.)

The basic test of materiality . . . is whether a *reasonable* man would attach importance . . . in determining his *choice of action* in the transaction in question . . . (and the above test would encompass any fact) which in reasonable and objective contemplation *might affect the value of the corporation's stock or securities*. *SEC v. Texas Gulf Sulphur Co.* 401 F2d 849 (1968). (Emphasis added.)

There must be a *substantial likelihood* that the disclosure of the omitted fact would have been viewed by the *reasonable investor* as having

significantly altered the “*Total mix*” of information made available. *TSC Industries, Inc., et al. v. Northway, Inc.* 426 US 438 (1976). (Emphasis added.)

These guidelines provide us with some direction that is unambiguous.

- Materiality is *user oriented*.
- Materiality is part of a *total mix of information*.
- The item subject to a materiality decision must have a *substantial likelihood* of significantly altering the total mix of information.

The excerpts, however helpful in their direction, fail to clarify a number of issues. For example:

- Should the auditor look solely to the investment community in judging materiality?
- How can the auditor identify the users’ mix of information?
- Furthermore, how can the auditor assess the current state of the users in order to know what change would represent a substantial likelihood of significantly altering the user’s mix?
- Should attention focus on the market value of the security or on the reasonably prudent investor?

This last point is subtle. Beaver (1968, pp. 69-70) differentiates between two types of market reaction to information—individual reaction within the market place (volume change) and aggregate market reaction (price change). Notice that only the guidance from the Texas Gulf Sulphur case directly mentions the market price and it is mentioned in conjunction with the individual orientation. Yet, the other three—including the most recent—still cling to the individual orientation. While this differentiation may not be terribly important in determining damages from an investors’ standpoint, as such damage is based on changes in market price, it presents a problem for the auditor in assessing other users’ needs and for basing his or her materiality judgments on any individual’s judgments—even a reasonably prudent investor’s.

The Market Data Approach

By adopting a market data based approach, Ken chooses to address the investment community, to consider the total mix of information that affects the prices, and to measure the sensitivity of the price to movements in several accounting variables (particularly net income). Finally, Ken elects to ignore the individual and focus instead on the market value of the security. Ken’s paper represents a serious attempt to deal effectively with each of these major issues. In that regard, it is exemplary. However, as Dyckman, Downes, and Magee (1975) point out, this market based approach is not without peril. Indeed, as all researchers who have filtered through study after study know, there is no one project that is significantly likely to provide the answer to serious problems. Ken’s paper and materiality fall into this category.

Perhaps the most serious problem with Ken’s approach is that the time series of earnings levels and security price levels are probably nonstationary. Because they are not stationary their relationship, as expressed by a

correlation coefficient, is likely to be overstated. The accompanying figure may help us gain some insight into this problem. Chart A in Ken's paper gives us a picture of two variables which are highly dependent. Indeed, Ken reports a correlation of 0.95. However, one may justifiably raise several questions. Is there some underlying variable creating a trend in each of these variables? Also, is there some trend that each of these variables follows as a result of this other variable? Francis (1976, p. 587) cites a study that indicates that New York Stock Exchange stock prices rose about 6.8 percent per year from 1926 through 1965. It is likely that *EPS* also rose during this period. Indeed, it is likely that both have continued to rise generally until I invested about a year ago.

Let us examine Figure 1, which represents the data from Table 1 rearranged against time. The X's on the diagram represent *EPS*. The 0's represent price. I believe the impact of time is evident and generally consistent with an increasing trend for both of these variables.

How then can we get away from this problem? One way may be to fit various models to the data as they stand, which could compensate for the drift. Another way is to use a first difference model. That is, contrast the changes in *EPS* with the comparable changes in price. Figure 2 represents these first differences plotted against one another. The correlation coefficient of this series is .60. Notice that the amount of "explained" association has fallen from about 90% using Ken's approach to about 36% using a statistically more correct approach. This rearrangement points out a major problem with looking at the raw data—namely that the strength of the relationships is overstated and the significant number of relationships is overstated. Neter and Wasserman (1974, pp. 352 ff.) point out other problems. Francis (1976, pp. 587-588) points out that even the distribution of first differences is unstable. Since this evidence regarding the first difference is not as compelling, one might try to construct a measure based on first differences. One potential model may take the following form.

$$\text{Price}_{t+3} + \text{Dividends} - \text{Price}_t - g = a + b \left[\begin{array}{cc} \text{EPS} & - \text{EPS} \\ \text{year ended} & \text{year ended} \\ \text{month } t & \text{month } t - 12 \end{array} \right]$$

This model would help the nonstationary problem, recognize the preponderance of findings regarding the time patterns of earnings, and assist with the problem of getting the amount of return matched to the period affected by the earnings' release time. One may also wish to try to use quarterly data (Foster, 1978, pp. 106 ff.). However, I feel that both these approaches are rather crude, and it seems to me that a model based on returns is a better approach. Francis (1976, pp. 588 ff.) indicates that such an approach may be better—at least given the statistical properties of security prices over time. Furthermore, using return data as the dependent variable would more closely relate to existing investment theory and practice models as I understand them.

The cross sectional analyses in the paper are subject to some rigorous statistical assumptions. With this in mind, I shall not discuss them, but merely refer interested parties to work by Johnston (1972).

Figure 1
 Price and EPS Plotted Against Time
 Data from Stringer's Table 1

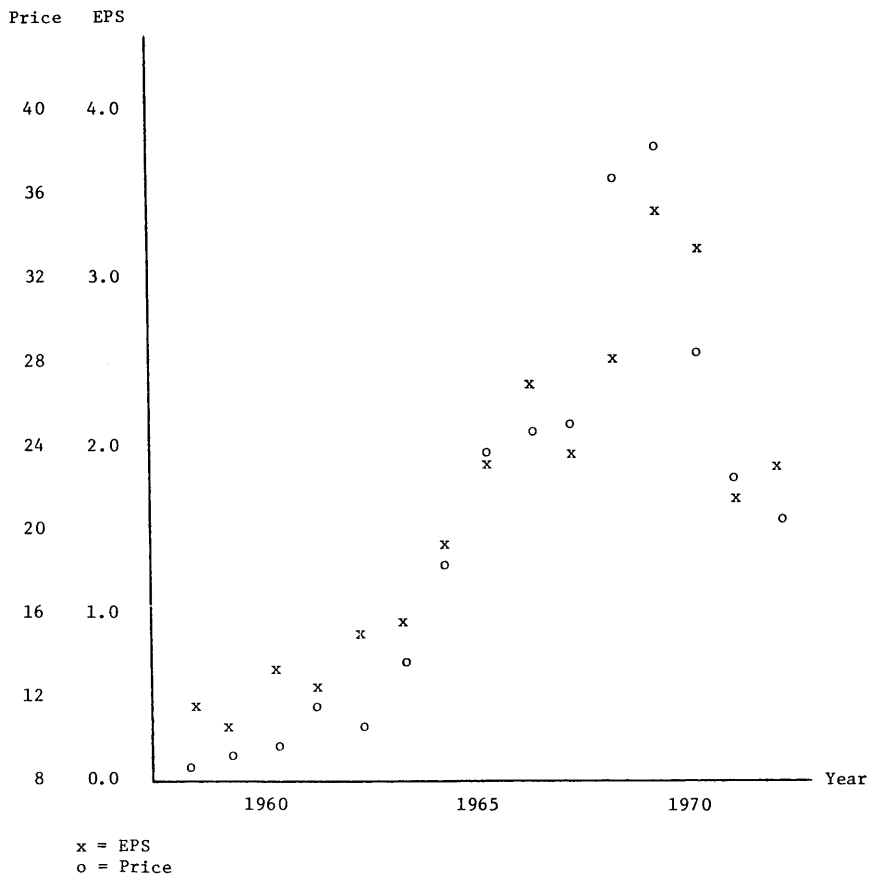
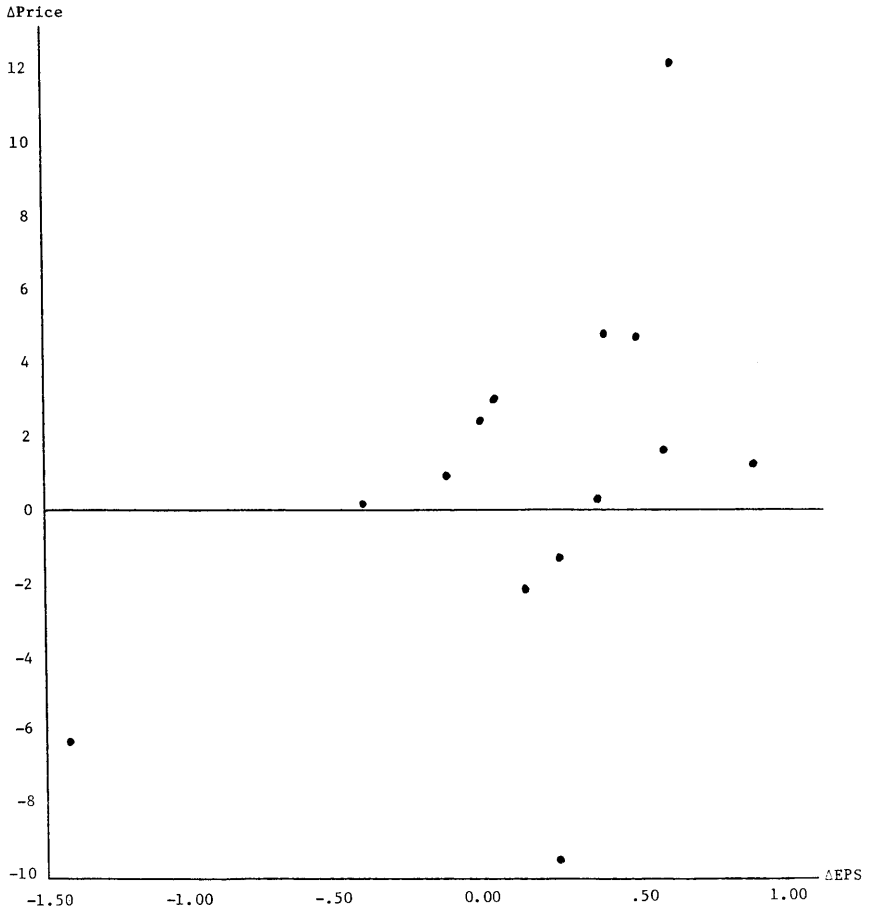


Figure 2

Δ Price versus Δ EPS Data
from Stringer's Table 1



Some Specific Observations

The key point that should come out of my remarks is that Ken's work attempted to establish a paradigm that did describe behavior of prices as related to accounting data while considering many of the relevant issues. Since some of the problems that I have cited came into the literature *after* Ken's work, it should not bear adversely on his study. Rather, it should advance the challenge to those among us who are equipped to perform such research. I should also add that Dopuch and Watts (1972, p. 184) have proposed using time-series methodology to assist the auditor in making materiality decisions. Kaplan (1978) has cited some problems with these approaches, but Foster (1978b, pp. 47-48) has observed that they may not be insurmountable. The Dopuch-Watts' proposal would acknowledge a significant change in net income brought on by an item subject to a materiality decision as one criterion. I think we must remember that any of these models are merely surrogates for true materiality.

If we pursue a market-based approach, we should bear in mind several problems. First, it is unlikely to yield a model that is sufficiently sensitive to potential changes in accounting numbers that will help us much. This may be judged by some to imply the immateriality of such potential changes. Secondly, while it could be arguably better than the individual approach in assessing the impact of potential changes in an accounting number in a *mix* of information, it is not without problems in that such a model must be forward looking and necessarily depend on estimates. Thirdly, while it may better approach the social welfare paradigm than the individual approach, it does not, *per se*, constitute an appropriate measure for such paradigm (cf. Gonedes and Dopuch, 1974). Finally, it is not readily apparent that the courts would accept this approach even though one might conjecture that it would be acceptable based on some interpretations of market-based theory and the prudent man rule applicable to decisions of pension fund trustees under ERISA (Pozen, 1977). Foster (1980) points out some other issues that should be considered before attacking the topic using this approach.

The User Approach

Let me change orientation now and discuss the individual user approach to determination of materiality levels. Ken's paper implied that some materiality guidelines should be proposed for the "usual" situation. I am not sure that I understand this term. It seems to me that financial statements are likely to be used for a given company at a given point in time primarily for either equity investment decisions or credit decisions. There is implied support in this use specificity in professional standards. SAS No. 39 "Audit Sampling" (1981) indicates that the auditor should consider the effect of any potential misstatement on the *expected use* of such financial statements in determining ultimate risk. If the auditor knows a client well, then it should be possible to assess the intended principal use of the statements in most cases. Where there appears to be an "ordinary" situation, the auditor should be able to adequately assess the materiality bounds pretty well. I base this conclusion on the proposition that very, very few audits result in any serious allegations of misstatement. Thus,

the cost of the variability in materiality levels on the audit may be measured on a societal basis primarily by a misallocation of resources. In an “ordinary” case, this misallocation may take the form of an interest rate that differs from optimal or a security price that differs from optimal. Both of these differentials are probably minor. For, when trying to measure this misallocation, notice that financial statement numbers are only part of a complex set of other information on which interested parties base their decisions. Other components might include product development prospects, market share, quality of management, etc. Note also that these decisions are primarily based on future states of these variables and therefore are likely to contain a considerable degree of variation and subjectivity. Therefore, I see no immediate cost justification for implementing an unduly rigid materiality rule for “ordinary” audits.

What is an “ordinary” audit? I am not sure that I know, but I can offer a few under-developed guidelines. An ordinary audit involves an auditee who is not in financial distress, who is not an apparent merger target, who is not intent on spinning off subsidiaries, who is not registering securities, who is not blessed with management of doubtful integrity and who is not encumbered with a lousy internal accounting control system. These characteristics are meant to represent potential criteria that would have to be combined in some unknown manner to identify “extraordinary” audits. I feel sure that members of the AICPA Task Force on Materiality and Audit Risk as well as Albrecht, Romney, and others (cf. Albrecht, et al., 1982) could suggest other danger signals. The key point I want to make is to have these types of clients bear the cost of more stringent materiality bounds and more auditor time.

In such situations the prudent audit firm may wish to alter the nature of the audit procedures, involve more senior audit personnel, and push the timing of such procedures back as far as practicable. Thus, the extent of testing, which would be the primary variable affected by a quantitative guideline, would be only one dimension triggered by auditees in this unusual category. A broader view of materiality in conjunction with audit risk should increase the real audit quality associated with these financial statements. The risk would lie primarily with the accounting firm to do the job. Failures on its part could be expected to lead to market pressures that would diminish the reputation of the firm—even to the point of ruin.

Since the profession will also be damaged to an extent with any audit failure, it should provide guidance on characteristics that denote an extraordinary audit. For example, it could propose the assistance of one or more outside specialists in such audits. This action would raise the auditor’s loss function if he ignored such guidance and the financial statements subsequently proved to be materially in error. On the other hand, the auditor who followed such guidance should have gone a long way toward establishing a good faith defense in the event that the statements were determined to be materially in error. At the present time, the auditor alone assesses the users’ decision models, their current portfolio state, their attitudes toward risk, and so on. For a single unknown user in society, accurate assessment is impossible. Thus, the auditor could call in an expert financial analyst for the client’s industry or an expert lending analyst familiar with the client’s industry or some combination of one or more of each of these. The auditor could have him, her, or them assess the

critical assertions in the financial statements. I personally believe that some type of multiple attribute utility function could then be developed to assist the auditor in determining which numbers or disclosures in the statements were in the critical, threshold range. This in turn would allow the auditor to address those areas with the appropriate intensity to meet his or her own utility function.

An alternative approach would be to set some percentage of some earnings figure for an overall materiality bound. My understanding of firm valuation research (e.g., Miller and Modigliani, 1961) and other research findings (cf. Foster, 1978) including those from behavioral decision theory research (cf. Libby, 1981) leads me to believe that this referent is the most reasonable single candidate. Furthermore, it could satisfy the need that any specific guidance in any Statement on Auditing Standards at the current time must be relatively straight-forward and simplistic. Therefore, I believe this one would be as good or better than any other based on current knowledge.

More Finite Guidance?

If, however, more finite guidance is deemed necessary and appropriate, I feel the materiality bound should be set at one percent of net income. Such a bound would undoubtedly create an increased demand for auditors and tend to place upward pressure on my salary level. *Of course*, I am not serious about such a stringent bound. Rather, I wish to make the point that as auditors we should not let our strong desire for a quality product from a profession that is dear to many of us assembled here, lead us to standards that are apparently too costly for any reasonable benefit to our society. This proposition holds even if we perceive that that same society has unleashed some competitive forces upon us recently that, in my opinion, tend to reduce audit quality. One minor encouraging sign in this matter currently lies in my desk drawer in my desk back in Urbana. That is, someone has done a paper that strongly suggests that the perceived prestige and quality of members of the traditional Big Eight are positively related to the perceived cost of their services. If this perception carries over to actions (including increased quality of audit with increased cost) then audit clients with "better" audit firms may benefit by lower costs of borrowing, because the subjects of this study were the chief financial officers at the nation's 25 largest banks.

I have not discussed any specific research projects, but I feel we could do research at the individual level to help with generating an appropriate methodology for eliciting the outside specialists' multiple attribute utility function or contribute some studies that could assist the task force in determining if setting a selected percent of income for planning materiality would increase the consensus of judgments among auditors.

Before I end, I thank Ken for writing a paper that made me think about this important issue. I also thank Howard and Don for asking me to be a discussant which undoubtedly piqued my own utility function. Finally, I hope my ideas further the progress on the issue of materiality judgments in auditing.

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