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Objectives of Financial Statements

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The Need for Accounting Objectives In an Efficient Market

Joshua Ronen

In light of the American Institute of Certified Public Accountants' recent appointment of the Accounting Objectives Study Group to formulate the objectives of financial statements, some questions were raised regarding the propriety of regulating accounting information through specifying the objectives of financial statements. Arguments were put forth stating that, in view of the generally demonstrated efficiency of the marketplace, Adam Smith's invisible hand will cause the appropriate kind and quantity of accounting information to be communicated; and that therefore the regulation of accounting information by a group of interested preparers and users will be wasteful. The purpose of this paper is to examine whether—in view of the theory of, and the empirical findings related to, efficient markets—there is a justification for the specification of accounting objectives.

The first part of this paper discusses the implications of the efficient market hypothesis and its related research with respect to the choice of a "best" accounting system. The second part is addressed to the question of whether there exist market incentives for firms to produce an optimal amount of accounting information which would eliminate the need for regulation. The issue is examined first by assuming that no disclosure laws exist, and then the existing disclosure laws are explicitly taken into consideration.

The Implications of Efficient Market Research On the Choice Among Accounting Alternatives

Recent research effort in accounting¹ centers on the implications of the efficient market hypothesis and the empirical capital market research for

¹ Ray Ball and Philip Brown, "An Empirical Evaluation of Accounting Income Numbers," *Journal of Accounting Research* (Autumn 1968), pp. 159-178. W. Beaver, P. Kettler, and M. Scholes, "The Association Between Accounting Information and Market Valuation of Securities," *Accounting Review* (October 1970), pp. 654-682. William H. Beaver, "The Behavior of Security Prices and Its Implications for Accounting Research (Methods)," Supplement to the *Accounting Review* (1972), pp. 407-437. R. E. Dukes, "Market Evaluation of Alternative Accounting Information Systems" (Unpublished dissertation, Stanford University). Nicholas J. Gonedes, "Efficient Capital Markets and External Accounting," *Accounting Review* (January 1972), pp. 11-21. L. L. Lookabill, "A Study of the Relationship Between Accounting Information and Market Valuation of Securities" (Unpublished dissertation, Stanford University).

choosing among accounting alternatives. For example, it is stated that “observations of the market reactions of recipients of accounting outputs should govern evaluations of the actual informational content of accounting numbers produced via a given set of procedures and the informational content of accounting numbers² produced via an alternative set of accounting procedures.” The underlying contention is that in the context of competitive and efficient markets, transactors in the aggregate will not react to accounting information³ unless the accounting numbers have informational content.⁴

Not much harm is caused by the assertion that when accounting numbers are used (as manifested in movement of stock prices), they have informational content. This is descriptive of a definition of what constitutes informational content and of actual phenomena, i.e., movement of stock prices. When it is asserted, however, that market reactions should govern the evaluation of accounting alternatives, the underlying implication is that when accounting numbers are used (i.e., the market reacts to them) they are also useful in the sense of satisfying the objectives of accounting. The problem with this approach is that it uses a definition and the manifested results of a descriptive process to make a normative judgment (that market reactions should govern the evaluation of accounting alternatives).

The assertion that market reactions should govern the evaluation of accounting alternatives is primarily justified by acknowledging that—assuming that individuals are rational and that markets are efficient (as defined and shown in the efficient market literature)—one cannot expect the market to react unless accounting information is useful. However, the kind of usefulness that should be inferred from (a) the proposition that individuals are rational and from (b) the findings that markets adjust efficiently and unbiasedly to information, may not necessarily be the kind of usefulness that we might care to require from accounting information.

Evaluation of Usefulness In Light of Accounting Objectives

Certainly, the kind of usefulness that is desired can be derived only from the objectives of accounting. For example, if among the criteria or objectives

² Gonedes, “Efficient Capital Markets and External Accounting,” p. 12.

³ Reaction to accounting information is generally measured via movements in the stock price through which the aggregate behavior of market transactors is manifested.

⁴ Informational content of accounting output is usually implicitly defined as those attributes of the accounting output that trigger market reaction. For example, Ball & Brown argue, “If, as the evidence indicates, security prices do in fact adjust rapidly to new information as it becomes available, the changes in security prices will reflect the flow of information to the market. An observed revision of stock prices associated with the release of the income report would thus provide evidence that the information reflected in income numbers is useful.” (Ball and Brown, “An Empirical Evaluation of Accounting Income Numbers,” pp. 160-161.)

of accounting there is listed the efficiency in resource allocation and perhaps some criteria relative to the distribution of wealth,⁵ it may be discovered that the kind of usefulness inferred from market reactions does not necessarily satisfy these two objectives. In other words, the kind of market equilibrium consistent with presently available accounting information and the degree of efficiency of the market's reaction to this kind of information may not necessarily be the desired equilibrium. (Note that equilibrium is a descriptive phenomenon and not in itself an indication that some normative criterion has been satisfied.) Thus, the manifestations of a present equilibrium which may be undesirable cannot be used as a normative criterion for choosing the accounting alternative which best satisfies an objective. The satisfaction of the specified objective may well require a different kind of market equilibrium which—if extant—would produce entirely different manifestations.

To put things somewhat differently, imagine that there are two market equilibrium systems, *A* and *B*, and two distinct systems of accounting procedures resulting in sets of accounting signals *X* and *Y*, respectively. Then assume that *X* and *Y* are evaluated on the basis of the market's reactions. Suppose it turns out that under system *A* the market reacts to *X* but not to *Y* (thus indicating that *X*, and not *Y*, has informational content) while under system *B*, the market reacts to *Y* but not to *X* (thus implying that *Y*, and not *X*, has informational content). Which is the better accounting system? Clearly, in this situation the market reaction is not a sufficient criterion. There is still open the question of which equilibrium system, *A* or *B*, better serves the objectives. This illustration could also be applied over time rather than across market systems. Presumably, a different market equilibrium system existed 100 years ago and the accounting system undoubtedly was somewhat different from today's practice. How can the two systems be evaluated if the market reacted to both systems? How can a descriptive phenomenon be used to make normative judgments?⁶

Exploration of the descriptive phenomenon is valuable in understanding the market mechanism and in generating hypotheses about the nature of decision-making in the marketplace. The descriptive phenomenon is also useful in testing the implications of hypotheses about how decisions are made in the marketplace. However, it cannot be the sole test of which

⁵ While the means of achieving allocation of resources in the economy are subject to debate, probably none would question the desirability of efficient resource allocation as a goal. As to equity criteria relative to the distribution of wealth, they are clearly implicit as objectives. For example, Rules 10b-5, 10b-6 and Section 16 of the Securities Exchange Act of 1934 and the Court rulings in the Texas Gulf case relate to insider trading and the disclosure of information.

⁶ Indeed, it may be argued that technological changes modify the nature of the equilibrium over time. The proposition of an accounting alternative whose test of usefulness is not derived from extant equilibrium can be viewed as a technological change in itself.

accounting alternative better satisfies our goals and should therefore be preferred. The appropriate test should depend, among other things, on pre-specified accounting objectives.⁷

The Argument That Accounting Operates In a Competitive Context

The contention that accounting alternatives should be evaluated on the basis of market reactions is partially defended on the grounds that the accounting process provides information only in a competitive context and that there are alternative sources of information that investors could use.⁸ The contention that accounting operates in a competitive context is based on (a) the assumption that accounting numbers include information that reflects economy-wide events and industry-wide events that can also be obtained from other indicators such as industrial production reports and national income reports, and (b) the evidence of the existence of anticipatory price movements that precede the announcement of accounting numbers.⁹ Thus, it is argued that if there were no other sources competing with accounting information, one would expect to observe rapid price movements when accounting data are disseminated. As a result, it is postulated that “. . . market transactors in the aggregate do not blindly accept and use accounting numbers only” and therefore “the market’s reaction to accounting numbers (e.g., the anticipatory reactions noted above) provides reliable indication of accounting numbers’ informational content.”¹⁰

There are several problems with these contentions. Alternative sources of information with respect to economy- and industry-wide events that affect the value of the firm may well exist, but the likelihood of alternative sources of information about the existence of a firm’s specific events is minimal. It is indeed possible that the latter does exist since such events usually constitute transactions involving other entities which, potentially, could provide the information. However, the cost of reconstructing the firm’s specific events from numerous and possibly scattered sources is probably prohibitive. As a result, such a reconstruction of events may not be undertaken by investors since

⁷ A framework for the formulation of accounting objectives is discussed by the author in “A User Oriented Development of Accounting Information Requirements,” pp. 80-103, this volume.

⁸ See, e.g., Gonedes, “Efficient Capital Markets and External Accounting,” p. 14: “In particular it appears that the accounting process—qua supplier of information—does not possess strict monopoly power over the supply of information pertinent to the evaluation of a firm. Instead, it appears that the accounting process—qua supplier of information—functions within a competitive context.”

⁹ For example, Ball and Brown, “An Empirical Evaluation of Accounting Income Numbers.”

¹⁰ Gonedes, “Efficient Capital Markets and External Accounting,” p. 16.

the cost may exceed the perceived benefits.¹¹ Thus, if some firm-specific information is not provided by the firm, even if it is available in the market it may not be used. This fact is consistent with an efficient market in which transaction costs are assumed to exist.

Moreover, a market equilibrium in which transactors do not seek information because of the high cost of search, even when they know that it exists, is consistent with the evidence collected about efficient markets. And when accounting information is provided about firms' specific events for which alternative sources of information are too costly to seek out, transactors are justified in relying on the accounting information.

Thus, if it is found that transactors accept and use accounting numbers (this phenomenon has occasionally been referred to as functional fixation,¹² although the term has never been rigorously defined), this does not necessarily imply that they do so blindly. Use of the accounting numbers by transactors may be explained by one or both of the following propositions:

1. In equilibrium, investors rely on accounting information whenever the cost of seeking alternative sources about the same events exceeds the benefits of searching. This is likely to be the case in particular with respect to firms' specific events.¹³ Thus investors' reliance on accounting information does not imply that they do so blindly, but rather that they make rational decisions about when to stop seeking information.

2. The accounting system is a vehicle for management to communicate its expectations about the firm's cash flows, and it is likely that investors view accounting information as a surrogate for management expectations which they utilize since there are no alternative sources.

A social organization that requires firms to report probably results from an implicit decision based on information economics. Delegation of the information provision function to the firm makes sense if the firm can produce the information at a lower cost than outsiders. This is consistent with the evidence that accounting information is anticipated through price move-

¹¹ This is consistent with the phenomenon, for example, that in some developing countries the state enforces the disclosure of minimal accounting information (apparently because individuals find it too costly to produce the information themselves). Turkey is a case in point. See Var Turgut, "The Turkish Uniform Accounting Plan," (Unpublished manuscript, University of Kansas).

¹² Yuji Ijiri, Robert K. Jaedicke, and Kenneth E. Knight, "The Effects of Accounting Alternatives on Management Decisions," *Research in Accounting Measurement*, edited by Robert K. Jaedicke, Yuji Ijiri, and Oswald Nielson (Evanston, Ill.: American Accounting Association, 1966).

¹³ The cost to the firm of processing information about its specific events and transactions is probably lower because of scale economies. While no evidence exists on this hypothesis, it is clearly empirically testable. It is also consistent with the observation that the SEC and other governmental agencies increasingly require more accounting information to be disseminated. To provide evidence against this hypothesis, it must be shown, for example, that anticipatory market reaction is caused solely through sources other than the firm and that the anticipatory reaction explains all reaction to accounting information (which has yet to be shown).

ments prior to the announcement date. There probably exist cheaper outside sources for information about economy-wide and industry-wide information that are tapped in advance of the announcement of accounting information. Some firm-specific events could also be anticipated as a result of announcements by the firms' managements through releases issued by market newsletter services and through reports by the firm to the SEC, etc. These "leakages," however, all come from the firm itself and could well be viewed as part of its information or accounting system. In fact, it might be advisable to incorporate such announcements formally into the accounting system, since they would then be subject to audit and verification.

In sum, the existing evidence on efficient markets may well be viewed as being consistent with the following statement: Market transactors, in the aggregate, accept and use accounting numbers as well as any additional information that they can obtain at reasonable search costs. Had accounting numbers not been provided, market reactions might have been different since the information contained in accounting numbers might then have been too costly to obtain elsewhere. Thus, market reactions alone do not provide a criterion for evaluating information alternatives.

In particular, individuals' reliance on accounting numbers does not indicate irrationality or psychological conditioning. Rather, it may reflect rationality within the context of a competitive market in which information is costly and in which expectations about the value of different data are heterogeneous. Individual rationality is thus consistent both with the reliance on accounting data (without testing their informational content through seeking other sources), and with a competitive equilibrium that assumes costly information and heterogeneous expectations. And while the evidence from the efficient market research (both the weak and the semi-strong form) is consistent with that efficient market hypothesis which assumes costless information and homogeneous expectations, it is also consistent with an efficient market hypothesis that assumes costly information and heterogeneous expectations.¹⁴

The Argument That Stock Prices Eventually Reflect "Inside Information"

Finally, the argument is usually made that market reaction is a reliable indicator since it impounds any existing information, even that not made publicly available. It is contended that since there must be at least one person possessing the information who recognizes the inefficiencies that result from its nonpublic availability, he would—being rational—exploit this opportunity either by transacting directly in the market or by selling the information. Thus, the knowledgeable person (possessing the information)

¹⁴ Stigler, for example, argues: "There is no imperfection in a market possessing incomplete knowledge if it would not be remunerative to acquire (produce) complete knowledge. Information costs are the costs of transportation from ignorance to omniscience, and seldom can a trader afford to take the entire trip." (George J. Stigler, "Imperfections in the Capital Markets," *Journal of Political Economy* (June 1963), p. 291, as quoted in Gonedes, "Efficient Capital Markets and External Accounting," p. 20).

will, through his own action, help to eliminate inefficiency in the market.

However, while it is true that any new existing information is apt to be impounded eventually through an arbitrage mechanism, this mechanism may not be the most desirable process through which information should get impounded in market prices. This is particularly true from the standpoint of social optimum (considering both allocative and distributive criteria). The undesirability can result for several reasons:

1. Assuming that inside information exists,¹⁵ there is uncertainty about the length of time needed for the arbitrage process to rectify the allocative inefficiency (resulting from nonpublic availability of the information). Since the time lapse is likely to be greater than it would be if such information were required to be immediately available to the public, the allocative inefficiency is apt to continue for a longer time period than if such a requirement were made.

2. Insiders possessing information not available to the public or superior forecasting ability are likely to cause the information to be impounded in market prices with less efficiency than if they were to make the information immediately available to the public. This is likely to be the case for at least two reasons. First, they may not have the sufficient capital immediately available to carry out the volume of trading necessary to rectify the inefficiency. Second, they are not likely to have a comparative advantage in selling information or in offering portfolio management services. In comparison, if such information were required to be made immediately available through the accounting system, the process is likely to be more efficient, since there is a greater likelihood that individuals with sufficient capital and those who possess comparative advantage in selling information would be included among the recipients of the information.

3. The likelihood of a single individual or a small knowledgeable group being able to interpret inside information properly is less than the likelihood of the same information being ably interpreted if it were available to many persons and many groups, i.e., if it were publicly available. In other words, the greater the number of participating rivals in the marketplace, the more efficient is the process of competitive equilibrium.

4. Finally, the prospect of insiders becoming wealthier may not be palatable to those for whom criteria for desirable distribution of wealth are considered to be important.

Existing Incentives to Communicate Desirable Information

It is assumed in the efficient market literature,¹⁶ that the existence of super-analysts will eventually insure that actual market prices are, on the

¹⁵ Some evidence on the existence of inside information is provided by Myron Scholes in "A Test of the Competitive Market Hypothesis: The Market for New Issues and Secondary Offerings" (Unpublished Ph.D. thesis, University of Chicago, 1969).

¹⁶ See, for example, Eugene F. Fama, "The Behavior of Stock Market Prices," *Journal of Business* (January 1965), pp. 34-105.

basis of all available information, best estimates of intrinsic values. But notice that the identity, on the average, between security prices and the intrinsic value ultimately depends on the ability to consistently predict the appearance of new information and the subsequent prediction of its impact on intrinsic values. Suppose there is new information which is neither made available to sophisticated traders nor predictable on the basis of presently known information (possibly because it does not fit into the familiar pattern of information dependencies learned by the analyst). It is conceivable that, had this information been made available, the stock price would have been changed as a result of impounding the content of the new information. It could be argued that, since equilibrium is reached in the absence of this information and the relative wealth of the investors is preserved, it is not crucial that the new information be reflected in actual prices. However, in that event, resource allocation is sub-optimal. Thus, from the standpoint of stating accounting objectives, the relevant questions are:

1. What are the likely sources that possess new information which may not be made immediately available publicly?
2. Does the existing market system provide incentives for those sources to make the information available?

A likely source of new information is the firm itself. The new information consists of prospective cash flows that result from the decisions and plans being made continuously within the firm.¹⁷ These plans and decisions are first known to the management; they are the endogenous factors—peculiar to the firm—responsible for the firm's unique rate of return. Because management is the first to know its plans, it is also the first to make a prediction of the cash flows that result from these decisions. Thus, by systematically and periodically communicating expectations of cash flows, management can provide valuable information that is not, at the present time, made available systematically.

The second question can best be examined by considering the system of incentives offered by the market that may induce the provision of such information with and without disclosure laws.

Incentives for Producing and Communicating Information in the Absence of Disclosure Laws

This question was investigated directly by Fama and Laffer¹⁸ and indirectly by Hirshleifer.¹⁹ In spite of the different approaches, the two discussions reach many of the same conclusions. Since Fama and Laffer's

¹⁷ While management's expectations of these flows may be communicated publicly, they are not part of the systematic and periodic accounting reports and they are generally communicated in an ad hoc and sporadic fashion at the present time.

¹⁸ Eugene F. Fama and Arthur B. Laffer, "Information and Capital Markets," *Journal of Business* (July 1971), pp. 289-298.

¹⁹ Jack Hirshleifer, "The Private and Social Value of Information and the Inventive Activity," *American Economic Review* (September 1971), pp. 561-574.

discussion is, however, more germane to the role of information produced by the firm vis-à-vis other sources, it is used as a basis for discussion. Their main conclusions are briefly stated, and their underlying assumptions are examined.

The Fama and Laffer Conclusions And Assumptions

Fama and Laffer conclude that the production of information for trading purposes only²⁰ is not consistent with Pareto optimality. The production and communication of this information is costly since it uses resources merely to redistribute wealth and not to generate it. Thus “investors as a whole would be better off (and the producer would be no worse off) if they could simply pay the monopolist in order to induce him not to produce information. . . .”²¹

Since high transaction costs are associated with such side payments, the authors predict that, in general, there will be some socially sub-optimal information output. Other conclusions of interest are as follows:

1. In equilibrium there will be a single producer of a certain type of information about a firm, and when this producer is an independent outsider (vis-à-vis the firm) his profits will always be greater if he sells the information rather than use it for his own trading.
2. Under competitive conditions of producing information, a producer can cover his costs only by selling to investors.
3. As a rule, under monopolistic conditions information will be sold.
4. When a firm produces information about itself, it produces less than an independent outsider, since the firm considers the effects of its information production on the firm's shareholders.
5. In the interests of its shareholders, the firm has strong incentives to have all the information produced at its discretion.

²⁰ That is, information that neither reduces risk, thus reducing the supply of a non-desirable commodity, nor improves operating decisions of the firm—thus bringing about savings in resources through their improved allocation. The authors concentrate on “information, as yet unavailable to the market, about decisions already made” (“Information and Capital Markets,” p. 291) that affects investor trading profits as a result of private access to new information. This type of information parallels what Hirshleifer (“Private and Social Value of Information and the Inventive Activity,” pp. 563-564) describes as prior information about the true states of the world in a simplified world of pure exchange, in which all productive transformations among entities and commodities are ruled out and in which the endowments of individuals can be modified only by trading. This is the type of information that can affect only the wealth distribution and not the resource allocation.

²¹ Fama and Laffer, “Information and Capital Markets,” p. 294. While Fama and Laffer discuss the incentives to produce information under both monopolistic, competitive and partially competitive environments, the thrust of the conclusion is not significantly affected by the economic environment assumed. In all environments, it is concluded that socially sub-optimal information will tend to be produced, and only the extent of sub-optimality and the identity of the producer may be affected.

In summary, Fama and Laffer conclude that, except in the case of monopoly or partial monopoly, and when the monopolistic producer is an independent outsider rather than the firm itself,²² the firm will tend to produce information about itself and prevent others from doing so.

The Fama and Laffer assumptions of primary concern to our discussion are as follows:

1. Firms are perfectly competitive in their product markets, and the capital market is perfect in the sense of zero transaction costs (costless access to publicly available information) and the existence of perfect substitutes for the firm's securities.

2. Investors can trade in the market without identifying themselves as possessing new information.

3. Investors have "homogeneous expectations" in that they agree on the implications of any given information set for the equilibrium prices of securities.

4. A seller of new information insists that the purchaser guarantee against resale of the information.

Moreover, it is assumed that any potential producer of information about a firm knows the probability distribution of market value changes associated with different levels of information expenditures, and that—should these distributions have a zero mean—this fact is costless information. As a result, market prices impound it, and the consequence of going from zero to some positive level of expenditure is a probability distribution of market value that has a zero mean.

Implications for Accounting

To examine the implications of the conclusions for the need to specify accounting alternatives, assume first that the firm is the sole producer of information. If the firm is a monopolistic producer, it will benefit its shareholders by enabling them to sell their stock in the case of negative foreknowledge information. Positive information would eventually come to light anyway and will not affect the expected gain to the firm's shareholders. But in the case of discovery information²³ the firm will release positive information and either suppress negative information or give shareholders the oppor-

²² Which is an unlikely situation when the type of information produced is one that relates to a firm's specific events (see discussion below). Moreover, Fama and Laffer state that "the firm is not limited to direct competition with independent producers for sales to outsiders, since the cost to an outsider of producing information about a firm is likely to be somewhat in the firm's control." ("Information and Capital Markets," p. 298.)

²³ The dichotomy between foreknowledge and discovery information was first made by Hirshleifer ("Private and Social Value of Information and the Inventive Activity"). Foreknowledge consists of events that will become known whether or not information about them is generated. Discovery involves things that would not become known without information production.

tunity to sell before the information reaches the market.²⁴

When information generation is competitive, the firm will prevent entry by independent producers, give its information output to its shareholders, and recover its costs entirely from sales to outsiders. In this case, since the information will be available both to the firm's shareholders and to outsiders, no investors will have expected trading gains. In the case of partial monopoly, the firm will act like a monopoly with respect to incremental information that the firm produces for which the marginal cost is below that of the next cheapest producer.

Thus, except for the case of competitive generation of information²⁵ there are likely to be trading gains or losses, i.e., redistribution of wealth. In the absence of a requirement with respect to immediate dissemination of information generated or known to the firm, and given all the Fama and Laffer assumptions,²⁶ there are incentives that induce firms and outsiders either to sell information or to trade on its basis—thus causing redistribution of wealth. This shift of wealth may violate social distributive criteria of welfare aside from waste of resources. Thus, a requirement that information known to the firm must be disseminated can help in preventing shifts of wealth that could be socially undesirable even when the information produced is assumed to have no allocative effects.

It is apparent from the foregoing that production of information which has allocative effects²⁷ may be consistent with Pareto optimality in the sense that the benefits resulting from production decisions based on the information generated may well exceed the costs of producing the information. Indeed, given the Fama and Laffer assumptions, both the firm and outside independent producers would have the incentive to generate the information and either act upon it or sell it.²⁸

It now becomes important to carefully examine the Fama and Laffer assumptions to determine whether, indeed, there is enough incentive to generate socially beneficial information that has allocative effects. Indeed, it seems unlikely that any information would have only a distributive effect and would not improve production decisions or the consumption-investment opportunities of individuals. For example, positive information (whether

²⁴ Fama and Laffer, "Information and Capital Markets," p. 294. Notice that in the case of discovery information, negative information may be suppressed. In a case where discovery information has allocative effects (in that it leads to improved operating decisions), on the other hand, it probably would not be disseminated, thus causing sub-optimality even under the strict assumptions made by Fama and Laffer.

²⁵ As indicated, this is unlikely with respect to the firm-specific information since the firm has first access to the transactions giving rise to such information.

²⁶ "Information and Capital Markets."

²⁷ Notice that Fama and Laffer postulated that discovery information may well be of the type that can improve production, i.e., have allocative effects.

²⁸ Except in the case of negative discovery information which, once generated, may be suppressed by the firm.

foreknowledge or discovery) released by the firm will bring about a positive revision in the prices of securities which in turn would reduce the cost of capital-raising. This, in itself, is bound to have an effect on resource allocation decisions within the firm.

The assumption that the capital market is perfect and that producing firms are perfectly competitive in their product markets is needed so that information about a specific firm will not affect the consumption-investment opportunities of individuals except through its effects on their wealth. This is analogous to Hirshleifer's assumption of pure exchange²⁹ in which only the endowment vector of individuals, rather than production, is affected by the information generated. But information about a product or an industry is likely to affect consumption-investment opportunities through its implications for changes in relative prices. Thus, in the case of nonperfectly competitive product markets or a nonperfect capital market or in the case where information is generated about an industry rather than about a single firm, the information generation will probably affect consumption-investment opportunities of investors, and thus affect the reallocation of resources and not merely the distribution of wealth.³⁰

Another set of assumptions that is not likely to hold is (a) that investors can trade without indicating that they possess new information and (b) that the seller of new information insists that the purchaser guarantee against resale of the information. The first assumption (nonidentifiability of a possessor of new information) insures that returns from exclusive access to information can be maximized. Through the second assumption other potential purchasers can be guaranteed exclusive access to the information sold. To the extent that either of these assumptions does not hold, which is the likely case, the incentive to generate and to communicate new information is significantly lessened. It is usually difficult to observe the selling of information about a firm, especially accounting information. Accounting information is provided at zero price. This is probably so because the transaction costs of guaranteeing exclusive access to the information and of maintaining the unidentifiability of the possessor of new information are very high.³¹

Even if information were sold at a positive price, the ability of the resulting price to provide an appropriate signal and incentive for the genera-

²⁹ "Private and Social Value of Information and the Inventive Activity."

³⁰ These are probably the situations that Hirshleifer considers as "the more realistic regime in which production and exchange both take place." (Hirshleifer, "Private and Social Value of Information and the Inventive Activity," p. 566.)

³¹ While information in the nature of "consulting advice" is sold by consulting and management-services firms, the costs of policing the right and the exclusive access of the purchaser to the information are much smaller than those associated with guaranteeing access to information in the nature of "facts" about a firm. This is particularly true if we allow for heterogeneous expectations governing at the market place so that there is disagreement about the implications of facts. The interpretive processing by "advisors" can be viewed like any other commodity that commands a non-zero price in the market.

tion of information would be very limited. This is so because the ability to enforce the right to exclusive access to the information purchased determines, to a significant extent, the value of that information and its price. The ability of such enforcement is likely to be very limited in the case of information about a firm (including accounting information), and thus the private benefit for the seller is apt to be significantly below the social benefit.³²

The observance of zero prices for information about a firm (primarily accounting information) and the regulation of the amount and nature of information to be included in reports issued by the firm about itself are consistent with the assumption that the costs of policing information are excessively high. In other words, the reason that accounting information is presently regulated is probably because the property policing costs are too high to allow the market to generate accurate information on the social benefits of accounting information. In this situation, the SEC's, or preferably the profession's, determination of the objectives and nature of desirable accounting information may be the most practical way of coping with the nonfeasibility of guaranteeing exclusive access to information about the firm, just as government non-price rationing may be the most practical way of coping with high exchange costs. It should be noted, however, that the SEC's or the profession's rationing of information about the firm is costly and only second best to a market in which exchange and enforcement costs were low. Regulation, essentially a political process, would result in less efficiency than reliance on a market with low transaction costs. But, in the absence of the latter, regulation may be the only efficient way of ascertaining the social value of information about a firm unless the cost of regulation per se exceeds the benefits from rationing, in which case regulation should be eliminated.³³

Finally, the assumption of homogeneous expectations makes possible the proposition that there can be general agreement on the probability distributions of market value changes associated with different information expenditures and, if these have non-zero means, market prices will adjust unbiasedly. Once we allow for heterogeneous expectations, this will not hold and the likelihood that incentives for generating information would exist will not be assessable.

If the above assumptions do not hold there may not be incentives in the market for generating information nor for overproducing information. In this case, and when the information has allocative effects (i.e., when information affects resource allocation for productive purposes), the systems of incentives presently provided in the market may not induce the generation and communication of socially desirable information.

³² For a lucid discussion of issues related to the impact of enforceability of rights to property on prices, see Harold Demsetz, "The Exchange and Enforcement of Property Rights," *Journal of Law and Economics*, VII (October 1964), pp. 11-26.

³³ This "truistic" statement merely indicates the desirability of an extensive cost/benefit study of accounting information regulation. Such a study itself is not costless.

Effects of Disclosure Rules

We now examine the possible effects of disclosure laws and regulation of information on the incentive for producing information about firms. If information that could potentially be produced by a firm has only distributive effects (e.g., for trading purposes), the present disclosure laws may lead to a social optimum.³⁴ If the firm is a monopolistic producer of information it will generally lose its incentive to produce the information, since under the disclosure regulations it is prohibited from discriminating in favor of its shareholders or from selling the information. This is also the case when the firm is able to produce the same information that an outside producer can generate at a lower cost. But as Fama and Laffer comment,³⁵ there may be situations in which the disclosure laws can lead to inefficiencies in the sense that an outsider produces information that the firm could produce more cheaply were it not for the disclosure law that destroys the firm's incentive to produce. A more detailed analysis of the effect of the particular disclosure law in existence may help to clarify these points. For this purpose it will be assumed that the information discussed has potential allocative effects.

Under the Securities Exchange Act of 1934, profits made within six months by a firm's officers through trading in the firm's stock inures to the firm [Section 78p(b) of the 15th U.S. Code]. Moreover, Rule 10b-5 (of Title 240 of the Code of Federal Regulations) prohibits the use of manipulative and deceptive devices, which are broadly construed to include making "any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading . . . in connection with the purchase or sale of any security." Rule 10b-6 of the same regulation prohibits trading in securities by parties interested in their distribution.

Under these rules a firm's officer, who is either in the possession of information or of the means to produce information which is either not likely to be revealed by an alternative source outside the firm within a period of six months³⁶ or whose effect on price is expected to persist beyond six months, would have an economic incentive to maximize his gains from the information by either trading in the stock himself or by selling the information to potential traders. (Notice that the law does not affect profits made through trading within a period that exceeds six months.) This does not mean that such an attempt to capitalize on information is costless. The attempt may be

³⁴ See Fama and Laffer, "Information and Capital Markets," p. 298.

³⁵ *Ibid.*

³⁶ The information could not likely be revealed by an outside source either if the insider has monopolistic access to it (as a result of his position or decision-making function within the firm) or because the insider can produce the information more cheaply, thus enabling him to deter the production by outsiders. Notice that much of the relevant information possessed by firm insiders is an already manufactured by-product of decision-making within the firm (e.g., cash flow forecasts necessary to make investment or divestment decisions), and the marginal costs of producing this information for the firm insider (or decision-maker) is zero.

strictly illegal under Rules 10b-5 and 10b-6, and the expected consequences of illegal action must be perceived as part of the cost of trading or of otherwise selling the information by the insider. In addition to this cost, there is the risk of the insider being held liable for misleading the firm's stockholders, thus jeopardizing his position in the firm.

At any rate, the incentive for acting on inside information that is likely to be profitable within a period exceeding six months is greater than the incentive to act upon the information whose usefulness is limited to a period of six months, since in the latter case the profits—by law—would inure to the firm. To the extent that the insider acts upon it, the information will eventually be impounded in market prices³⁷ thus securing allocative efficiency. Such trading, however, would violate the distributive goals implied in the Securities Exchange Act.

When the profits from using information are expected to be made if trading is completed within a period of six months, firm insiders would have no economic incentive to trade in the firm's stock, since the profit from trading will inure to the firm. An insider can, of course, sell the information to outsiders (not including the firm's shareholders since a major shareholder of the firm is also considered as an insider by the law), although the transaction costs of selling such information to outsiders are apt to be high both economically and legally (due to Rules 10b-5 and 10b-6). To the extent that insiders would sell such information in spite of the economic and legal costs, the information will be impounded in prices, although in the process some resources will be wasted through higher costs (as well as through increased risk to the sellers). To the extent that insiders would be deterred from selling information in this case, there may still be an incentive to generate the information (if it is not already known) and to make it available. In the absence of a direct economic incentive for the insider either to trade or sell the information, it would be to his benefit to make it available to the firm's shareholders so as to enable them to maximize their wealth and thus indirectly reinforce the insider.

But a distinction must be made between positive information (i.e., information which if known will push stock prices up) and negative information (information which if known will bring prices down). If the information is positive, it benefits the shareholders if the information is made publicly available immediately since the market value of their holdings³⁸ will be increased. In fact, firms' officers do seem to make positive information available immediately through press releases, analysts' conferences, and speeches. Such

³⁷ Subject to the inefficiencies that may result from communicating the information through insiders' actions for profit maximizing purposes versus immediately making the information available publicly, as discussed earlier.

³⁸ In the case of foreknowledge, the only benefits of immediately making available positive information from the point of view of shareholders is temporal, i.e., the price increase occurs immediately rather than later in time. In the case of discovery information, however, the benefits consist of the total increase in wealth as a result of prices going up, since if information is not generated and communicated, it will not be known.

releases tend to be timed shortly before new issues or secondary issues of securities are offered even though this practice is illegal. This is understandable since the impact on prices of new information tends to reduce the firm's cost of raising capital. From the point of view of social optimal allocation, the public may be able to make more informed allocation decisions if specific information about a firm is periodically and systematically released so that it can be compared with information about other firms released at about the same time. The social benefit of such presentation which enables this comparison across firms may well exceed the private benefits perceived to inure to the firm as a result of such periodic reports. Thus, the firm may not have an incentive to communicate its information in such a manner, although such periodic and systematic communication—in addition to facilitating the comparison across firms—could enable potential investors to monitor and audit the information and thus assess its reliability.

In the case of negative information, the firm will have no economic incentive to make the information public.³⁹ It is again useful to make the distinction, however, between foreknowledge and discovery information. In the case of foreknowledge, since the information will become known later to the public, the firm will have an incentive to generate the information and make it known to its shareholders so that they can avoid capital losses by selling their stock. Because of the existence of the disclosure law, however, such trading will not enable shareholders to avoid losses. Since positive knowledge will only produce temporal benefits, the incentive to the firm for generating and communicating foreknowledge would be substantially reduced in cases where a disclosure law does not exist. Positive knowledge, being foreknowledge, will become known and inure to the benefit of shareholders anyway.⁴⁰ When negative information is already generated as a by-product at zero marginal cost (as in the case of forecasts necessary to make decisions which have to be made anyhow), such negative information will neither be acted upon by shareholders (in view of the law) nor publicly revealed (assuming that the firm will run the risk associated with Rule 10b-5).

In the case of discovery information, the incentive for the firm to produce the information will be provided only through the positive information, since negative information will be suppressed (assuming again that the firm is willing to run the risk associated with Rule 10b-5). Positive information will be immediately made available so as to increase shareholders' wealth as soon as possible. Thus, the disclosure law is likely to exert only a small impact on inhibiting the production of discovery information.⁴¹

³⁹ Except for the risk associated with not disclosing known negative information due to Rule 10b-5 of Title 240, as explained above.

⁴⁰ But the identity of the benefitting shareholders may change between the point of time at which the foreknowledge would otherwise have been generated and the point of time at which it becomes publicly known. In that case, the temporal benefits referred to above and foregone as a result of late generation of the information would include wealth transfer from potential to existing shareholders.

⁴¹ This slightly inhibiting effect results from whatever impact Rule 10b-5 will have on the likelihood that the firm will suppress negative information.

However if, as is likely, most of the insider information is foreknowledge (being results of decisions and actions already taken by a firm), it is highly likely that the net effect of the disclosure law will be to inhibit the processing and communication of insider information. To the extent that inside information has potentially beneficial allocative effects, the net effect of the disclosure law would be harmful since it will not reveal information that improves the allocation of resources. Hence, the consideration of requiring, through regulation or through specification of objectives, that inside information be periodically and systematically processed and communicated may well be worthwhile.

Conclusions

Considering the existing theory and evidence related to efficient markets, the choice among accounting alternatives cannot be determined solely through the examination of market price reactions to accounting information. Explicit formulation of accounting objectives is needed.

Market incentives, even in the absence of present disclosure laws, may not be sufficient to insure the production and communication of economically useful information. The existing disclosure laws aggravate the problem and seem to reduce the incentive to produce and disseminate useful information. To the extent that information has potential allocative effects outside the firm, the existence of a disclosure law may be suboptimal because the firm would lack the incentive to produce information that could make resource allocation more efficient. Thus, present disclosure laws that prohibit the firm from selling information or from benefitting its shareholders vis-a-vis others can destroy the incentive to produce economically useful information.

Presumably, the intent of present disclosure laws is primarily to prevent undesirable redistribution of wealth that could result from monopolistic access to information. In the process, however, the overall magnitude of wealth may be lessened as a result of impeding the production of desirable signals for resource allocation. If the wealth-distribution goal implied in the disclosure law is taken for granted, regulation of what information is to be produced *and disclosed* by a firm is needed to insure that information useful for allocation decisions is produced by a firm.

In other words, if present disclosure laws must continue to exist to satisfy wealth distribution and other goals, *additional* regulation of accounting information by the private and/or governmental sectors seems warranted to nullify the adverse effect that the present laws may have on the production and communication of economically useful accounting information. Moreover, even if present laws are abrogated, market forces still do not seem to provide sufficient incentives for the production of useful information, thus implying that regulation appears necessary. The formulation of accounting objectives, preferably by the accounting profession and other directly involved parties, is a preliminary and a necessary step for such regulation.