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Accounting Horizons
Vol. 8 No. 4
December 1994
pp. 80–96

COMMENTARY

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Costs and Benefits of Business Information Disclosure

This article analyzes the costs and benefits of disclosures of information by profit-making enterprises. It excludes the costs and benefits of disclosure by governmental entities and private-sector, not-for-profit entities. Entirely different issues arise when disclosure must be related to the goals and effective functioning of democracy and charitable undertakings.

Even when narrowed, however, the range of enterprise disclosure to be considered is enormous. It can vary from none to complete. None is a total right of privacy. Complete disclosure is a public right to see anything and everything.

Some parties might benefit and others might suffer from any disclosure, though it is also true that some disclosure is immaterial in cost and in effect. The types of costs and benefits are economic, political, social, and ethical. Parties may be affected by both costs and benefits. For example, the costs of corporate disclosure are borne by owners, but they are also beneficiaries of the disclosure they pay for. Financial report users do not neatly share in costs and benefits. Although owners pay for corporate disclosure, stock market investors considering ownership are free riders who pay nothing at all.

These kinds of complexities are one reason this article does not circumscribe the range of costs and benefits it considers. There is another. There are no agreed-upon measures of the dollar value of costs and benefits from disclosure. The appropriate starting place for a consideration of costs and benefits is therefore to identify their range and nature and to explore their relationships.

The costs and benefits treated in this article are categorized by interests. The categories are:

- The entity's interests.
- Nonowner investors' interests.
- The national interest.

The analysis of these three sets of costs and benefits in sections I through III below is followed by a section that assesses future changes in the costs and benefits (section IV) and a concluding section on the limits of cost-benefit analysis.

The article makes an assumption throughout that must be understood in order to follow what is being said. All references to disclosure pertain only to "informative disclosure." Informative disclosure is useful for decision making, even if it involves costs that outweigh its usefulness. It is unbiased and untarnished by misleading omissions. Moreover, informative disclosure provides an opportu-

This article is a modified version of a paper prepared for the AICPA Special Committee on Financial Reporting, and the authors acknowledge the helpful suggestions and advice of committee members. However, the views expressed in the article are solely those of the authors.

nity for a decision maker to obtain an incremental improvement in assessing the real prospects of an enterprise. Thus informative disclosure, as used in this article, is an ideal concept created to illustrate the costs and benefits of disclosure. (The appendix presents a more formal definition of informative disclosure.)

There is, however, a practical side to this approach. Frivolous and misleading disclosures by definition entail more costs than benefits. Investigating the costs and benefits of such disclosures is therefore not a very constructive enterprise.

I. THE ENTITY'S INTERESTS

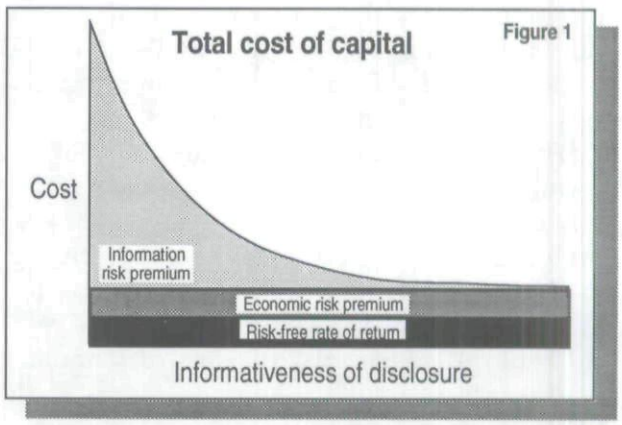
For our purposes the entity will be treated as owners and employees, including managerial employees. Owners, of course, are a class of investors and share interests with the nonowner investors in the next section. The separation is justified because the entity's interests are hard to conceive of apart from those of owners. The interests of owners and employees can be different, but both share a dominating interest in maximizing long-term cash flow. The bigger the pie, the larger the shares to be divided, whether cooperatively or through conflict. "Long-term" presumes that the viability and earning power of the entity are not put at risk for the sake of short-term profits.

The remarks below treat "the entity" as an individual business entity, not as the collected set of "entities," which creates a group. Thus, what is in "the entity's" interest need not be in the interests of all entities as a group or in the interests of all entities in the subset represented by an industry. The "entity" is also the average entity. Differences in circumstances are sometimes addressed, but when they are not, assume the average entity.

Cost of Capital

The entity benefits when disclosure leads to a lower cost of capital. Disclosure accomplishes this by helping investors and creditors understand the economic risk of the investment. Inadequacy and incompleteness of information are reflected in the cost of capital as a premium above the risk-free rate of return plus the economic risk premium. Low disclosure generally results in a high information risk premium, and high disclosure generally results in a low information risk premium.

The way reduced information risk works to lower the cost of capital is illustrated in figure 1, a point-in-time graph that varies extent of informative disclosure against three costs of capital. However, because this is a point-in-time graph, two costs are fixed and therefore shown as constants. The risk-free rate of return—in our economy usually considered to be the yield on Treasury bills—is fixed at the graph's point in time, even though it would otherwise vary as market transactions changed the yield on Treasury bills. Similarly, the risk from economic factors is shown as a premium fixed at the graph's point in time, even though it otherwise varies as the entity's conditions and prospects vary. The third cost, the information risk premium (the cost of transacting without full informative disclosure), naturally decreases as informative disclosure increases.



The key to the graph is the relationship between information risk, economic risk, and disclosure. The ideal, minimum cost of capital is the risk-free rate of return plus the premium for economic risk. However, the only way the investor or creditor can assess economic risk is through information. Therefore, the informativeness of disclosure is the route

for the investor to arrive at the economic risk of the transfer of capital. With no information to assess economic risk, the capital supplier will charge a high (but not infinite) price for the capital, a price approximating the "loan shark" rate. As the company provides more informative disclosure, the demanded rates decline, because the capital supplier has a better and better understanding of the enterprise's economic risk. These events are shown by a curve for the information risk premium that declines as informativeness of disclosure increases and thereby approaches the risk-free plus economic-risk rate of return.

In understanding the graph, it is important to keep in mind the relationship between the information risk premium and economic risk premium. Information about a company can give either positive or negative impressions of a company's prospects, and the combination of such types of information contributes to learning the economic risk of the business. Thus when the information indicates poor prospects, it means that the economic risk premium is high, not that the information is functioning to raise the cost of capital. Ignorance of a company's risks (the highest level of information risk premium) is still an increment above the risk-free rate of return plus the economic risk premium. Getting a better understanding of the true economic risk would still lower the cost of capital.

The curve is based on the definition of informative disclosure given above and is otherwise illustrative only. It does not, for example, include the risk of misinterpretation of informative disclosure, and it does not include the investor's uncertainty as to the reliability of the informative disclosure. Nor does it take into account prior experiences with such factors. For these reasons, as well as because we are talking about the average entity, the curve cannot be expected to accord with every entity's cost-of-capital experience. For example, if the market misinterpreted informative disclosure and underestimated the economic risk, a company's securities would be overpriced. In that situation, additional informative disclosure accompanying an issue of new shares could correct the overestimate of the company's prospects and thereby raise the company's cost of capital. Only if it is assumed that informative disclosure is misinterpreted this way most of the time would the illustrative value of the graph be undermined. But it is far more reasonable to assume that misinterpretations distribute normally between under- and overestimates of economic risk, with the net result for all entities that informative disclosure reduces the cost of capital.

It is difficult to prove empirically that the cost of capital is lowered by informative disclosure, even though it is logically and practically impossible to assess an entity's economic riskiness without relevant information. There is abundant evidence that prices are influenced by disclosure (efficient markets research), but that is not the same as empirical evidence that informative disclosure lowers the cost of capital. We also know that capital suppliers request and sometimes demand disclosures — that is, they sometimes make disclosure a condition of the transaction. Presumably the desired information is considered relevant to their decision making, but, again, this is not the same as empirical evidence that informative disclosure lowers the cost of capital. Finally, there is anecdotal evidence, such as the recent article by Sweeney (1994) in the *New York Times*, which argued that many companies "realize that institutional investors prefer to put money into companies that provide lots of information and that good investor relations can help their stock price."

Apart from the fact that the disclosure selected for testing must indeed be informative, practical problems have prevented empirical study. Dhaliwal (1978), however, took advantage of voluntary reporting of line-of-business information prior to the SEC's requirement to report it. Using three surrogate measures to compare the cost of equity capital for two populations (a control group unaffected by the requirement and a group that would disclose the information for the first time), his findings were consistent with the lower-cost-of-capital thesis.

More recently Conover and Wallace (1994) found that greater extent of disaggregated disclosure for geographical segments correlated with higher stock prices. Their research analyzed the disclosures for the year 1983 by 230 multinational companies listed on the New York or American stock exchanges. The year 1983 was chosen because it was the first year that FASB Statements 14 (on segments) and 52 (on foreign currency translation) were both applicable. As compared to the market as a whole, the firms' market performance was better in relation to the extent of their geographic segment disclosures by a statistically significant margin.

Cost of Developing and Presenting Disclosure

Owners alone ultimately pay for the cost of disclosure, just as they ultimately bear all entity costs. Disclosure costs include the cost of gathering, processing, auditing (if the information is audited), and disseminating the information. However, since costs affect cash flows, employees, as parts of the entity with an interest in its cash flows, have an interest in minimizing the cost of disclosure.

The cost of developing and presenting information that is also used by or needed by management must be excluded from the cost of developing such information for external disclosure. To the degree that the work has already been done or would be done for managerial purposes, there would be no need to duplicate it. Other disclosure costs (formatting, packaging, and disseminating information), however, would be unaffected by the overlap between costs incurred for managerial purposes and costs incurred for purposes of external disclosure.

Litigation Costs

Litigation can arise from allegations of insufficient informative disclosure or from allegations of misleading disclosure. All suits that arise from insufficient informative disclosure support the thesis that litigation costs decrease with extent of disclosure.

Litigation arising from disclosure that is alleged to be misleading requires closer analysis. Cases of genuinely misleading disclosure are not relevant, because they cannot tell us about the costs of informative disclosure, which we have defined as unbiased and helpful to financial report users. Suits alleging that informative disclosure is misleading are meritless, that is, they are unjust. But we know that such suits occur and that they can impose costs on the entity.

The costs of such suits can vary from minor to very significant. Although litigation cost arising from increased informative disclosure is not a regular cost for all companies, directors and officers insurance is a widespread cost that is arguably attributable in significant measure to meritless suits. For those sued, apart from the legal fees, court awards, and the costs of settlements made strictly as business decisions (the lesser of two cost evils), there is a cost in public relations and in the distraction of executives from productive activities in the entity's interests.

It may be held that litigation costs increase with the extent of informative disclosure, but it is unlikely that this is true overall. The case for increase lies in instances where voluntary disclosure, particularly of forward-looking information, followed by share-price declines, have led to allegations of fraudulently misleading disclosure. Such suits have been widely protested by the financial-reporting community and cited in Congressional hearings. Their existence raises the question of the relationship between the population of meritless suits and the population of voluntary informative disclosures that did not result in suits. The latter population is presumably by far the larger, and it weighs against the thesis that litigation costs increase with extent of informative disclosure increases. In addition, four other perspectives must be brought to bear:

- First, fuller disclosure should lead to smaller claims because the stock market would have more realistic expectations of the company's prospects. The smaller the

discrepancy between the valuation implicit in the market price and the valuation based on the company's true prospects, the smaller declines in share prices from disappointed expectations. Since damages are based on the extent of the decline, the smaller declines would lead to smaller damage claims.

- Second, defendants would have better defenses. Assume, for example, richer disclosure of enterprise risks. Defense attorneys could point to such disclosures to argue that the plaintiffs were adequately informed of the potential decline in share prices. This would increase the proportion of cases won by defendants and reduce the settlement amounts. The more important effect is the reduction in settlement amounts, because the cost of pursuing litigation leads to the settlement of most securities class actions.
- Third, there would be fewer suits as a consequence of the two conditions just cited. A higher proportion of the share price declines would be too small to justify a suit. Better defenses from richer disclosure would warn class-action attorneys that they would have a more difficult time winning and gain less in settlement. This would also be factored into class-action attorneys' decisions to bring suit.
- Fourth, the relationship between share price volatility and meritless suits raises the question of the degree to which the nature of the business rather than extent of disclosure is the reason for a given suit. In instances where companies volunteered forward-looking information and were subsequently sued after share-price declines for allegedly misleading investors, extent of disclosure is causative, if not the only cause. However, because of the way in which these suits occur, triggered by declines in share prices, the nature of the business is a major factor.

For these reasons, we can conclude that considered in full context, litigation costs caused by meritless suits decrease, rather than increase, with increasing extent of disclosure.

Competitive Disadvantage

Disclosure that would weaken a company's ability to generate future cash flows by aiding its competition is not in the interests of that company's employees and owners. Public companies have traditionally been very sensitive about disclosing information that might create competitive disadvantage, and private companies, though not faced with public disclosure obligations, sometimes show similar concern (for example, about whether a supplier who receives disclosure reveals such information to the disclosing company's competitor who is also the supplier's customer).

The types of information that might create competitive disadvantage are:

- Information about technological and managerial innovation (e.g., production processes, more effective quality-improvement techniques, marketing approaches).
- Strategies, plans, and tactics (e.g., planned product development, new market targeting).
- Information about operations (e.g., segment sales and production-cost figures, workforce statistics).[1]

The level of potential competitive disadvantage from disclosure in the categories above varies considerably, from zero to very high. Some operational data create no competitive disadvantage. However, segment profitability data could allow competitors to concentrate on the most profitable areas of the disclosing entity's business. A potential competitor could learn something about the capital investment required to enter into competition. Disclosing product development plans could lead a competitor to develop the same kind of product, with a race to the marketplace, or it could lead to counter-product development that would render a planned product either less attractive when it was released or soon to be leap-frogged. Information on targeting new markets could lead to defensive

[1]Stevenson (1980, 9–11) provides these categories and gives some examples within the categories. More are available in Mautz and May (1978), for example, on pp. 95–96

measures, such as increased advertising. Information on technological innovation could help lead competitors to improvements of their own.

The key factor in determining whether information in the categories above creates competitive disadvantage is timing. Products in development eventually come to market. Strategies become obvious from actions, and information about them can then no longer lead to competitive disadvantage. At some age disclosure simply loses its capacity to create competitive disadvantage. A given category of disclosure can be competitively disadvantageous or competitively meaningless depending on when the disclosure is made.

The role of timing suggests the possibility of differential disclosure based on estimated risks of competitive disadvantage. For example, capital suppliers might receive disclosures promptly under agreement with the disclosing entity to keep the disclosures confidential. The disclosure would be released publicly only when time has reduced or eliminated the estimated risks of competitive disadvantage.

Timing is not the only factor that determines the level of competitive disadvantage from disclosure. Other factors implicit in the examples above are the type of information, the level of detail, and the audience for the disclosure. We have already noted that routine operating data is less likely to cause competitive disadvantage than information on product development. But the greater the level of detail about new product plans—for example, including all unique features and the reasons for their potential appeal—the greater the likelihood of competitive disadvantage. Finally, as shown by the example of restricting disclosure to capital suppliers under confidentiality agreements, the parties with access to a disclosure determine its influence on competitive disadvantage.

Even with awareness of the factors just cited, it is difficult to generalize or be certain about the effect of particular disclosures on competitiveness. For example, the potential competitor determining the investment hurdle to enter an industry might as likely be dissuaded by the disclosures as convinced to become a competitor. Japanese companies' lead in analog HDTV would have suggested that almost any information about their technology was competitively disadvantageous, but the absence of such information was probably a factor in the move to a digital approach that appears to have given U.S. companies a technological lead.

There is also disclosure behavior that runs counter to the notion of competitive disadvantage. New products are sometimes announced early in order to convince competitors the market has been taken and to give the product a headstart in name recognition. Announcements of new products and planned products are also a form of public relations, keeping a corporate name in the public mind associated with progress. Finally, product plans are often revealed to capital suppliers in order to keep or win their support.

There is a vast difference between the purpose of disclosure to investors and creditors, on the one hand, and competitors' purposes, on the other. The purpose of disclosure to investors is to help them to estimate the amount, timing, and certainty of future cash flows from investing in the disclosing entity. Competitors are not trying to predict the enterprise's future cash flows, and information solely of use in that endeavor is not of use in obtaining competitive advantage. Overlap between information designed to meet investors' needs and information designed to further the purposes of a competitor is therefore coincidental.

Every entity that could suffer competitive disadvantage from disclosure could gain competitive advantage from comparable disclosure by competitors. There cannot be competitive disadvantage to one entity without one or more others gaining competitive advantage. Assuming it is required, competitors would have access to each other's disclosures. This suggests a net equality of competitive advantage and disadvantage for each enterprise. However, individual circumstances would undoubtedly differ. A technological leader would presumably have more to lose in reciprocated technological disclosure than a technological

laggard. And those subject to direct competition from foreign companies with lower levels of disclosure could suffer competitive disadvantage from disclosures used by those competitors without access to the reciprocal disclosure that could bring offsetting competitive advantage. Nevertheless, for any given entity, competitive advantage from others' disclosures or the potential for such advantage must be counted along with whatever competitive disadvantage stems from that entity's own disclosures.

This creates the concept of *net* competitive disadvantage from disclosure. It would vary from entity to entity and from time to time, could be positive or negative, and could therefore also be called net competitive *advantage* from disclosure.

At least one distinguished CFO believes that disclosure of research ideas to competitors benefits the entity because it enhances research productivity. Here is the way Judy Lewent, CFO of Merck, explained her thought.

> We know that in order to advance swiftly toward successful research, it is often necessary to have our competitors working very closely in the same area. For example, I'm convinced that our research productivity is enhanced because so few boundaries exist among scientists at different companies and universities and at government-sponsored research at the National Institutes of Health. Tremendous spillover benefits arise as a result of scientists' propensity to publish and exchange ideas, particularly at the discovery stage; yet this in no way diminishes the highly competitive nature of the research process. (Nichols 1994, 97-98)

Put another way, reciprocal disclosure can be mutually beneficial because of the fillip it gives to the rate of technological progress. The improved rate brings advantages sooner.

There is some interaction between competitive disadvantage and other costs and benefits of disclosure. The cost of developing and presenting disclosure reduces competitiveness to the degree that it exceeds competitors' similar costs. The same is true of any litigation costs arising from disclosure. A lower cost of capital from disclosure improves competitiveness, and good relations with capital suppliers could help do the same.

Entity Behavior

Entities sometimes alter their behavior in response to disclosure requirements or the information that is disclosed, and the behavior can lead to costs or benefits. Today, there is talk of developing substitutes for stock options in the event the FASB requires that the costs of such options be recognized. The FASB's pronouncement on postretirement benefits other than pensions acknowledged the argument that preparers would change the designs of their postretirement benefit plans or the way the plans were financed (FASB 1990, par. 130).

However, disclosure-responsive economic behavior may decrease as well as increase costs. Developing new approaches to remuneration to replace stock options is a cost that would be borne by the entity. The postretirement benefits statement, on the other hand, contributed to an increasing appreciation of the dimensions and growth of health benefits costs and the need to control them.

It is very difficult to predict the results of disclosure on enterprise behavior. The imminent adoption of the FASB's pronouncement on contingencies in 1975 led to predictions that corporate risk and insurance management would be changed (e.g., increased limits on insured exposures, increased legal expenditures, changed coverages to accommodate increased exposures from the disclosure requirements, revised insurance and reinsurance contracts by captive insurance companies). There was concern about adverse consequences. In a study performed after the Statement was issued, however, Goshay (1978) found that there were no impressive differences between the risk management decisions of the companies he studied and those of a control group.

The FASB's first statement on foreign currency translation in 1975 evoked controversy over potential costs in enterprise behavior. A post-issuance study three years later did find behavioral changes in foreign exchange risk management as a result of the new requirement. However, some of the changes were beneficial (for example, companies became more aware of exchange risk and more sophisticated

in evaluating the cost of foreign currency loan transactions). The researchers could not conclude either that the increased level of resources devoted to exchange risk management resulted in significant cash flow benefits or that the disclosure requirement's effects were of overall benefit or detriment to entities or society at large (Evans et al. 1978, 15-20).

There seems no basis for concluding that extent of disclosure results either in net damage from enterprise behavior or net benefits. Each case is unique. However, if new disclosure is truly informative and previously underappreciated by enterprise management, as was the case with the costs of postretirement medical benefits, there is likely to be a net economic benefit.

An important element of entity behavior is the exercise of corporate suffrage and decisions by directors. Information prepared for external reporting also contributes to corporate suffrage and directorial decisions.[2] To the degree that informative disclosure to investors and creditors serves the health of a corporate entity by enabling those who participate in corporate governance as shareholders or directors to make wise decisions that affect the entity's future economic success, it is a benefit.

Public Relations

Disclosure can have public relations benefits. For our purposes, the primary public-relations issue is relations with the investment community.

Investors and creditors get impressions of companies' openness and forthrightness. A more formal assessment is the annual evaluation of corporate financial reporting by the Association for Investment Management and Research. Each year the Association's Corporate Information Committee rates the quality of reporting in 31 industries. Financial analysts aware of the companies that received awards for excellence are likely to have a more favorable impression of those companies because of it.

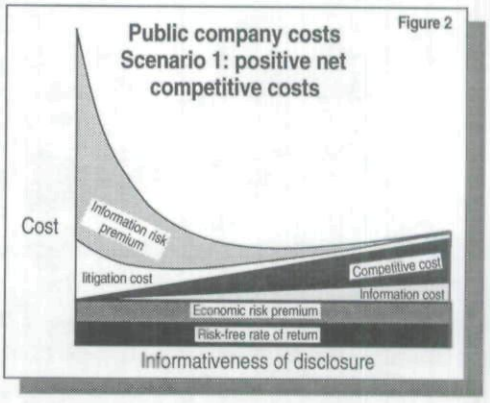
Corporate citizenship is another aspect of public relations served by disclosure. Businesses discharge some part of their accountability obligations to the community through disclosure.

Cost Summary

The major entity costs from informative disclosure that have been discussed in this section are summarized in figures 2, 3, and 4. These treat in sequence the total cost of increasing disclosure for a public company assuming positive net competitive costs, for a public company assuming negative net competitive costs, and for a private company, where competitive disadvantage and litigation are omitted as, relatively speaking, insignificant cost risks.

As with figure 1, these graphs reflect costs at a point in time, hypothetically varying only extent of disclosure and describing by the curves estimated cost changes from those variations. (Future cost changes from other circumstances are treated in section IV below.) Again the graphs are illustrative only. The curves are estimates.

In figure 2, two costs decrease with more informative disclosure (information risk premium and litigation cost) and two increase (information cost and net competitive cost). The

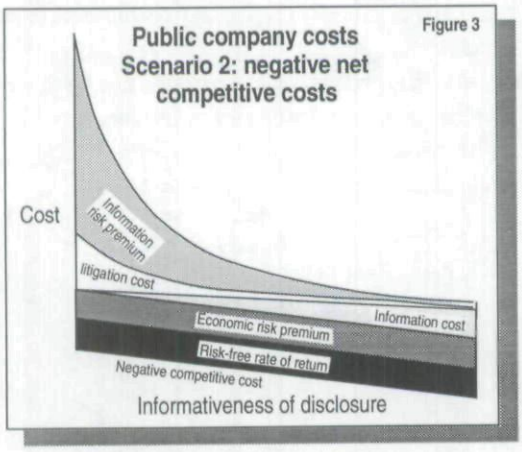


[2]Statement of Financial Accounting Concepts No. 1 notes: "Financial reporting should provide information about how management of an enterprise has discharged its stewardship responsibility to owners (stockholders) for the use of enterprise resources entrusted to it. Management of an enterprise is periodically accountable to the owners .... Financial reporting should provide information that is useful to managers and directors in making decisions in the interests of owners." (FASB 1978, pars. 50, 52)

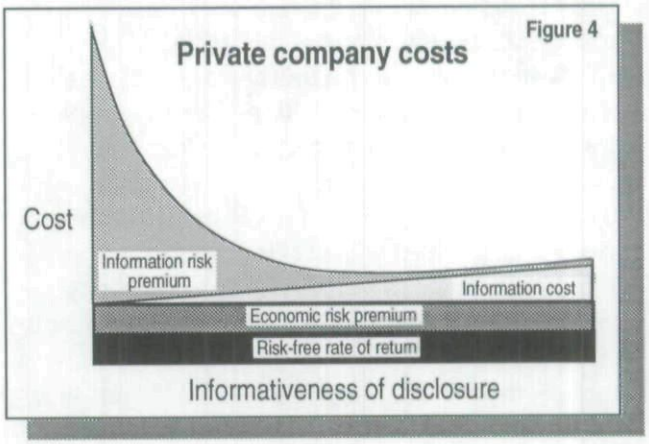
graph reflects the assumption that the entity suffers positive net competitive costs (net competitive disadvantage). The total cost curve has its minimum (the entity's optimal level of disclosure) in the valley at some level of informative disclosure that is greater than zero but less than complete. It is the task of those responsible for informative disclosure to determine in light of existing circumstances where on the curve we are today and how to respond to that determination.

Figure 3 is the same as figure 2 except in one very influential respect. It assumes negative net competitive costs (net competitive advantage) to an extent that exceeds information cost. This is shown by pulling the other curves toward and even beneath the horizontal axis, which is hidden but still represents informativeness of disclosure. With this assumption, the curve's "valley" disappears, and there is no real limit to the entity's disclosure consistent with its interests.

Figure 4, which describes the costs for a



private company, differs from figures 2 and 3 by omitting litigation cost and net competitive cost. Only the cost of producing and presenting the disclosure rises with increasing disclosure. The resulting curve descends rapidly and then becomes a gradually rising plain, with the optimal level of disclosure being the lowest point on that curve. To imagine how this would function, consider the relationship between a private company and its banker. If the banker wants additional disclosure, the disclosure would not be expected to be distributed beyond that banker. There would then be no competitive disadvantage and minimal litigation risk. The advantage in cost of capital would have to be weighed only against the cost of producing and presenting the disclosure.



II. NONOWNER INVESTORS' INTERESTS

This category refers to the interests of investors and creditors who are not included in category 1—those in the marketplace who might invest in the entity. The category therefore excludes all owners, who have been defined as part of the entity, and also those potential owners who are employees of the enterprise.

Reduced Information Risk

Nonowner investors benefit from the lowered risk of making an error in allocating their resources. The way in which this occurs has already been described in section I under the entity's "Cost of Capital." It was described there because the two benefits are interdependent. The entity's benefit from a lower cost of capital is a consequence of nonowner investors' benefit from the lowered risk of making errors in their decisions: The investors' lowered risk leads them to lower the price for capital.

Reduced information risk is not automatically or equally available to every nonowner investor, because each is subject to the risk of misinterpreting informative disclosure. In ad-

dition, depending on the type of new information provided, there will be a learning curve in taking advantage of it. Nevertheless, the basic relationship between informative disclosure and nonowner investors remains that investors' likelihood of allocating their capital unprofitably diminishes with the increase of informative disclosure.

The benefit of lower information risk accruing to nonowner investors generates benefits to other interests. In fact, it is a great engine of such benefits. We have already noted the interdependence between the entity's lower cost of capital and investors' reduced information risk. In addition, the national interest in effective capital allocation and market liquidity depends on nonowner investors and creditors acting on disclosure in their decision making. Similarly, reduced information risk is integral to the social benefit of consumer protection.

Costs

Potential owners obtain the benefits of disclosure without the costs. They are free riders, not paying the costs of litigation, competitive disadvantage, or developing and presenting disclosure. However, they would pay these costs if they became owners in the sense that the stream of cash flows to the entity would be curtailed by the costs the potential owners had previously avoided as free riders.

III. THE NATIONAL INTEREST

Some may question whether the costs and benefits to the national interest should be weighed in evaluating disclosure, taking the position that accounting should be neutral in the sense of not being entwined with issues of public policy. However, neutrality in accounting in the sense of focusing on effective economic measurement is consistent with the national interest, and such accounting need not be entwined with narrower issues of public policy. There is no question that the full range of costs and benefits from disclosure includes those that fall to the national interest. Interpretations of the national interest in specific accounting issues are cited in public debate; the FASB's mission statement contains a national-interest paragraph;[3] and the securities laws' establishment of a statutory disclosure system is Congressional testimony to the fact that corporate disclosure is a matter of national interest. These reasons and citations suggest that the national interest should not be excluded in considering the costs and benefits of informative disclosure.

The U.S. national interest is lodged in the concept of the greatest good for the greatest number. As with individuals, there is a difference between enlightened and unenlightened interests. On the national level it consists primarily of short-term (unenlightened) as opposed to long-term (enlightened) interests. The remarks below refer to long-term interests.

Cost of Capital

To the degree that disclosure contributes to lower capital costs, it is in the national interest. Low capital costs are desirable for their contribution to economic growth, jobs, and an improved standard of living. All these follow from the fact that low capital costs increase the rate of investment by entities.

The exception to the generalization that low capital costs are in the national interest is when inflation is being fought by higher capital costs. Even then, the national interest is served by the lowest cost of capital consistent with controlling inflation. More importantly, disclosure is not a useful technique in raising capital costs. Such a course (temporarily decreasing informative disclosure) is more likely to lead to chaos than macroeconomic benefits. Federal Reserve and fiscal policy, the accepted tools, are unquestionably more efficient and effective.

[3]"Accounting standards are essential to the efficient functioning of the economy because decisions about the allocation of resources rely heavily on credible, concise, and understandable financial information. Financial information about the operations and financial position of individual entities also is used by the public in making various other kinds of decisions." (FASB 1987, par. 2)

Effective Allocation of Capital

The national interest in effective allocation of capital cannot be underestimated. It has been of concern in recent years, with increased international competition. That is one of the explanations for "industrial policy" and studies on building competitiveness. Rich disclosure contributes to effective allocation of capital by enabling investors and creditors to identify the most productive enterprises. Unwise investments are bad for economic growth and national competitiveness. Apart from the obvious case of an investment that quickly ends in bankruptcy, companies capable of high level performance should have adequate supplies of capital.

The effective allocation of capital refers to more than the allocation of financial capital. It also includes human capital because human capital tends to flow to the best opportunities and informative disclosure helps talented people identify the best opportunities. With the increasing rate at which financial capital flows across borders, human capital, which crosses borders at a much slower rate, is widely recognized for its contribution to national competitiveness.

Liquidity

Disclosure contributes to the liquidity of the capital markets, also a benefit to the national economy. A more liquid market assists the effective allocation of capital. Liquidity varies according to the bid-ask spread. The wider the bid-ask spread the less liquidity (i.e., fewer transactions take place), and the narrower the bid-ask spread the greater the liquidity (i.e., more transactions take place). Two principal determinants of the bid-ask spread are the degree of information asymmetry between the buyer and seller and the degree of uncertainty of the buyer and the seller. Both larger asymmetry and greater uncertainty widen the spread, but lower asymmetry and less uncertainty—two products of broad, public disclosure—diminish it, thereby increasing liquidity.

National Competition Among Businesses

If there are indeed competitive advantages and disadvantages from entity disclosure, there must be a resulting increase in the intensity of competition. To the degree that disclosure adds to competition among U.S. businesses, other things being equal, it serves the national interest.

Vigorous competition among businesses leads to greater efficiency and national competitiveness. This has been part of our national political ideology and law for generations (e.g., the anti-trust laws and the FTC's mandate to fight restraints on trade). Economists and public policy-makers support the idea that competition is needed for long-term economic growth, and anticompetitive features in other societies are widely cited to explain slow growth and difficulties in emerging from recession.

The U.S. is not, of course, a land of unfettered competition. There are types of trade protection and subsidies that reduce the vigor of marketplace competition. Although these inconsistencies often reflect the power of relatively narrow interests or concern for their plight, rather than the national interest in its full breadth, there is also a set of inconsistencies based on national security needs and a smaller set based on the economic policy of assisting research-and-development projects considered underfunded and promising. However, national policy and our economy, on balance, are heavily weighted toward market-determined economic decisions, which means free and fair competition.

Apart from the exceptions just cited, there are specific devices to give monopoly advantages to companies and other economic agents. These are patents, copyrights, and trade secret law.[4] Their economic rationale is that a

[4]The subject matter of a trade secret may be a formula, machine, process, or compilation of information that confers competitive advantage and that is known only to its owner and employees (Stevenson 1980, 15–16).

certain level of anticompetitive advantage is necessary to encourage innovation and risk taking. Other justifications can be made based on notions of fairness and ideas of property, but only the economic rationale is of interest here.

Three conclusions follow from the existence of these devices and their economic rationale. First, our society recognizes that there should be limits on competition. Second, in the case of trade secret law, our society recognizes that there must be some protection against unauthorized disclosure even if it is anticompetitive. (Patents and copyrights are not limits on disclosure; they are forms of disclosure that are accompanied by monopoly rights to protect competitive advantage.) Third, discussions of competitive disadvantage from disclosure must consider that these devices protect competitive advantage that otherwise might be lost from disclosure.

There are limits to the need for anti-competitive devices to encourage innovation and risk taking. First, in our economy most innovation and risk taking is encouraged by the profit motive functioning apart from anticompetitive devices and, ironically, by competition. Innovation enables one competitor to stay ahead of another as does risk-taking investment in cost-lowering technology. Second, once conferred or otherwise in hand, monopoly rights function as a drag, rather than a spur, to innovation and risk taking. They are a spur only when they are a profit-protecting prize to be sought.

We can conclude that the existence of anticompetitive devices does not alter the generalization that, other things being equal, disclosure's encouragement of competition is in the national interest.

International Competition

Foreign corporations selling to the U.S. market do not have in their home countries the same disclosure requirements that U.S. corporations have here. It is typically more costly for U.S. firms to prepare disclosure under the U.S. requirements, a competitive disadvantage. Another potential competitive disadvantage is that U.S. disclosures allow foreign competitors to know more about publicly traded U.S. firms than such firms know about competitors from abroad.

The competitive advantage overseas firms have from lower disclosure requirements in their home countries could be cured by tariffs or other forms of trade restriction. Although the debate over free trade is beyond the scope of this article, the context puts the competitive-cost issue in a different light.[5] The difference in costs of disclosure can be seen as one of many cost differences that go into the economics of international trade. U.S. spending per pupil in excess of competitors', for example, could be considered a subsidy to the businesses that pay more for disclosure than their foreign competitors. Such cost differences are ingredients in the mix of comparative advantages that drives trade.

U.S. firms also compete with foreign corporations in third-country markets. Again, the competitive advantage derived from disclosure is one of the full set of cost differences that go into the economics of international trade. Trade restrictions, however, are not an option in such cases.

One mentioned remedy, assuming it were available, is the so-called level playing field, a U.S. level of disclosure identical to the levels in foreign competitors' home countries. However, equality of disclosure by itself is not a rational approach to the national interest. It ignores the quality and sufficiency of disclosure. No disclosure, foreign or domestic, creates a playing field as level as any other. An approach that totally ignores the objectives of effective capital allocation and the interests of investors cannot be considered rational. The benefits of informative disclosure obviously weigh against leveling by reduced disclosure. Moreover, the U.S. has long had a distinction between public-company disclosure requirements and private-company disclosure requirements that is inconsistent with a purely level playing field on disclosure.

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[5]For a concise modern statement of free trade arguments, in the context of a rebuttal, see Bhagwhati (1988).

There is also the question of what is meant by a "playing field." A disclosure system is only part of a capital allocation system and cannot be understood out of that context. This point is made in the study on national competitiveness by Michael Porter of Harvard Business School for the Council on Competitiveness (1980, 83, 85). Porter notes that German and Japanese enterprises have fewer external reporting requirements, but have closer, long-term relationships with dominant owners, who are informed by other mechanisms. In this way Porter justifies recommending more and better disclosure in the U.S. to improve capital allocation in the interest of national competitiveness. For our purposes, the differences among national capital allocation systems means that comparisons based on disclosure alone must be considered incomplete.

Globally harmonized disclosure standards that adequately serve users' needs and meet cost-benefit tests would end the problem of international differences in disclosure. But that is down the road. For the present, it is important to note that U.S. companies can raise capital abroad if they choose to or engage in private placements in the U.S. Their decisions to stay in the U.S. public market suggest its advantages outweigh its disadvantages. The advantages include low cost and liquidity that are partly attributable to disclosure.

The U.S. also has an interest in attracting overseas firms to its capital markets. However, the arguments that apply to the national interest in the disclosures of domestic issuers apply to foreign issuers. It is again in the national interest, for example, that the stock of U.S. capital be effectively allocated and for the markets to be liquid. If attracting foreign issuers is in the national interest, the benefit of lower capital costs from fuller disclosure serves that interest.

Litigation Costs

Litigation arising from informative disclosure—i.e., meritless suits—creates a social cost. There is evidence that high-tech companies, with high share-price volatility, have been particular targets, sued when their shares decline. Thus it is arguable that meritless suits have their greatest influence on the smaller, cutting-edge firms that contribute disproportionately to economic growth and job creation.

As described in section I, there are various components to the costs of litigation, but in sum they weaken enterprises financially and distract them from their economic missions. The national cost is a less effective economy. There are also costs in economic growth from a higher cost of capital (since the threat of litigation has curtailed disclosure) and from less effective corporate governance (since independent directors, fearing liability, are harder to obtain).

Consumer Protection

Disclosure plays a major role in the government's consumer protection efforts. This includes regulated disclosures on product labels, in advertising, and in lending. For our purposes, the important element is the consumer-protection aspect of corporate financial disclosure. The SEC regulates corporate financial disclosure largely to protect the interests of investors and creditors, the consumers of corporate securities. To the degree that informative disclosure provides needed consumer protection, other things equal, it is a benefit in the national interest.

Externalities

Society has an interest in the externalities of business operations (e.g., environmental pollution and effects on communities). Federal and local governments have acted in all sorts of ways to regulate externalities and remedy their effects. Measurement and disclosure have been a key part of these efforts (e.g., the environmental impact statement). To the degree that public disclosure by business entities (e.g., risks and uncertainties) assists governments in assessing problems caused by externalities and making socially useful decisions in response, disclosure is in the national interest.

IV. LOOKING TO THE FUTURE

A full consideration of costs and benefits includes how they could change in the future. The objective is to contribute some perspective on long-term, net costs and benefits. Many of the generalizations below depend on the conclusions reached above, but only major factors are considered.

For the entity, the lowered cost of capital would continue to be a benefit. If we presume additional informative disclosure, the benefit should increase. The rate of increase depends on the degree of informativeness of current disclosure. If it is very high, only marginal improvements are available. Research on the needs of financial report users would clarify this.

The cost of developing and presenting today's disclosure will decrease in the future primarily because of advances in information technology. A greater overlap between managerial information needs and those of investors and creditors should have a similar, if smaller, effect. If we postulate increasing disclosure, there would still be a cost-of-preparation decline in the long term. In the future, information technology will totally transform the economics of developing and presenting disclosure.

Litigation cost is extraordinarily difficult to predict because of possible changes in laws and regulations. Additional safe harbors for forward-looking information, for example, are a genuine possibility. An extrapolation from today's litigation costs suggests significant increases in the future, but such increases would not bear a one-to-one relationship with litigation costs from increased informative disclosure. Today's costs derive from meritorious as well as meritless suits, and many meritless suits originate in business volatility that precipitates drops in stock prices, not increased extent of disclosure. When considered in full context, increased informative disclosure, as we have seen, should reduce litigation exposure.

Greater informative disclosure would increase competitive disadvantage for public entities, but not sharply. The mitigating circumstances cited above would continue to limit the level of disadvantage. Competitors will improve their ability to learn from informative disclosure, which would help to maximize competitive disadvantage for disclosing companies, but this would be partly offset by the increasing dependence of business on science and technology and the advantage of more rapid fruition of profitable ideas from mutual disclosure. If the level of disclosure by U.S. public companies increases faster than that of foreign companies, competitive disadvantage from foreign competitors' use of increased disclosure by U.S. companies will grow. However, if the reverse occurs (the level of disclosure by foreign competitors increases faster than that of U.S. companies), competitive disadvantage to U.S. public companies from added disclosure will decrease.

Nonowner investors' benefits from informative disclosure would increase in the future as those disclosures increased. Again, the rate of increase depends on the degree of informativeness of current disclosure.

Information overload has long been an important concern, but the analytical power of investors and creditors, assisted by computers and software, should keep pace with any likely increase in informative disclosure. At the moment, institutional investors and creditors have access to greater analytical power than is necessary for current levels of disclosure. The only potential caveat in this scenario applies to individual investors. As a group, they would be less well prepared to benefit by processing additional disclosure than institutional investors, but should nevertheless. Efficient market research shows that securities prices reflect all publicly available information, which means that individual investors would benefit from information analyzed by institutional investors. In addition, many individual investors rely on investment advisors who would either perform or have access to analyses of additional informative disclosure. Finally, any substantial market demand for simplified analytical software is likely to be filled, making it possible for an increasing number of individual investors to perform

their own analyses of increased informative disclosure.

The national interest in informative disclosure will continue and will become stronger. The advantages of lower cost of capital, market liquidity, increased competition in the business world, and, most importantly, effective allocation of capital would improve with greater informative disclosure. The national interest in consumer protection and corporate externalities should grow only moderately, in part because they are, in the circumstances, rather high at the moment. Their standing is masked by the difficulty in getting any issue at the top of the national agenda and by the paramountcy of economic growth and job creation.

Summary

In light of the trends just discussed and recalling figures 2, 3, and 4, we can ask, first, whether the optimal level of informative disclosure is likely to increase or decrease in the future when viewed solely from the entity's perspective. However, unlike figures 2, 3, and 4, the costs would be changing over time, rather than responsive to hypothetical increases in disclosure as of today.

The dominant trend appears to be the rapidly decreasing costs of preparing and communicating disclosure. This would increase the optimal disclosure level for private companies. For public companies, unless competitors develop the capability to impose significantly greater competitive disadvantages through use of the information or litigation costs become more perverse, the most likely result is that the optimal level of disclosure will increase in the future. This applies both to public companies with negative net competitive cost from increased disclosure (competitive advantage) and for those with positive net competitive cost.

The second information-technology trend, users' greater power to access and interpret information, will increase all users' benefits. Users' interests in increased disclosure are consistent with an increase in the optimal level of disclosure from the entity's perspective.

These changes would be consistent with the national interest. From the perspective of the national interest, an increase in the optimal level of disclosure would be a long-term benefit.

V. THE LIMITS OF COST-BENEFIT ANALYSIS

Cost-benefit analysis of disclosure is limited in its effectiveness by the nature of social decision making, which certainly includes setting accounting standards. Nobel-laureate Kenneth J. Arrow's studies of collective decision making found that ideal outcomes could never be a direct aggregation of constituent preferences (Arrow 1983). Thus, assuming, fanciful though it may be, that decision-makers determining business disclosure had absolute knowledge of every individual and organizational self-interest in terms of dollar-denominated costs and benefits, it would be impossible to reach a decision that gave those preferences equal treatment. No social preference can directly reflect the rank ordering of all constituents' diverse preferences.

These constraints suggest that mechanisms for social decision making need to do more to achieve socially desirable ends than tote up representations of constituents' interests or their preferences, even if they claim backing in cost-benefit data. The constraints also suggest that judgments must be brought to bear to make tradeoffs. Public-interest objectives can help, and so can procedures to ensure due consideration of the interests of all relevant parties, including those interests not vehemently expressed or even unexpressed.

The limited use of cost-benefit information suggests the FASB was wise to add this qualification to its mission-statement precept on weighing the views of constituents: "The ultimate determinant of concepts and standards, however, must be the FASB's judgment, based on research, public input, and careful deliberation, about the usefulness of the resulting information" (FASB 1987, 3).

Even if it cannot be decisive by itself, additional academic research on the costs and

benefits of disclosure could be very helpful. Research could advance our knowledge and improve cost-benefit evaluations. The authority of credentialed researchers can drive home finally the fact that a full set of dollar-denominated costs and benefits is a hopeless quest. Ideally, research on costs and benefits would have balance. Increases in studies of costs or benefits alone, or a population of studies heavily weighted toward one of the two, could have a one-sided effect on the public dialog. That would be unfortunate, because one of the potential contributions of cost-benefit research is to help ensure that all parties with a stake in disclosure decisions receive the attention worthy of that stake.

APPENDIX
Informativeness of Disclosure

Although the text and graphics in this article are heuristic, it is possible to take a more formal, information-theoretic view of the informativeness of disclosure. Under this approach, the information content of a message is defined as its capacity to reduce uncertainty (i.e., increasing informativeness of disclosure equates to decreasing investor uncertainty which leads to a decreasing information risk premium demanded by investors). Uncertainty reduction is inversely related to the *ex ante* probability of receiving a particular true[6] and relevant[7] message: the more improbable the message *ex ante*, the more informative. For example, the reliable message that a particle moved faster than the speed of light has zero probability *ex ante*, thus infinite information value to a theoretical physicist (but not a teeny bopper). The reliable message that a building is on fire has very low *ex ante* probability, thus very high informativeness to an occupant. The response "fine" to the question "how are you?" has very high *ex ante* probability, thus very low information content. It is well known, for example, that stock prices do not respond to earnings-per-share announcements that equal the expected amounts, but do respond to surprising earnings-per-share announcements.

To express the idea formally, the information content, I_M, of a reliable, relevant message, M, equals the logarithm of the reciprocal of the *ex ante* probability of receiving the message ($I_M = \log_2(1/p(M))$).[8] The information content of multiple, nonredundant messages is the sum of the contents of the individual messages. Nonredundancy is expressed as a conditional probability:

$$p(M_1 \cap M_2) = p(M_1) \bullet p(M_2 \mid M_1) = p(M_2) \bullet p(M_1 \mid M_2)$$

Thus x values in figures 1 through 4 in this article can be defined as

$$x = \log_2\left(1/p\left(M_1\right)\right) + \sum_{i=2}^{n} \log_2\left(1/p\left(M_i \mid M_1, \ldots, M_{i-1}\right)\right)$$

where n is the number of messages disclosed.

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[6]If messages were dichotomized as true or false, then true messages would have information content and false messages would not. Of course, real messages are not generally dichotomous with respect to truth. Rather, they have degrees of reliability, which might be measured, for example, by their standard errors of estimate: the smaller (larger) the standard error, the greater (lesser) the reliability. For simplicity, this appendix assumes highly reliable (i.e., essentially true) messages.

[7]Investor uncertainty does not refer to a generalized state of mind, but rather to a specific decision problem, such as how much shares of company X are worth. Only information that reduces uncertainty with respect to that estimate is relevant for purposes. If an investor were trying to decide the worth of shares of company X, the receipt of reliable news that a fish flew through the sky might be very informative generally, but would shed no light on the worth of company X, would be irrelevant to the investor's decision, and would have no information content for that decision.

[8]If message M can take any of n values and the *ex ante* probability of the ith value is p_i, then the expected information content, $E(I)$, of the message (also known as the entropy of the message) is

$$E(I) = \sum_{i=1}^{n} p_i \log_2(1/p_i)$$

For a primer in information theory, see Cover and Thomas (1991).

Note that x is independent of the order in which the n messages are disclosed, because each probability is conditional on all prior messages. Also note a caveat: managers may have a bias to present good news and withhold bad news. To the extent investors suspect such a bias, they discount the news. However, there are at least four mitigating factors to this tendency: (1) accounting and disclosure standards are structured to produce unbiased presentations[9] (e.g., a company must disclose not only assets, revenues, and opportunities, but also liabilities, costs, and risks), (2) independent audits of information reduce bias, (3) managers' (long run) employment potentials are affected by their reputations for integrity, and (4) biased reports may be punished by criminal and civil litigation.

Thus the x axis in the figures in this article assumes that information is unbiased. And, by definition, redundant information has no informative value (i.e., the information content of company reports is not proportionate to their mere volume, but to their capacity to reduce uncertainty to investors).

[9]In this context, unbiased means that companies cannot elect to disclose only the favorable information under generally accepted accounting principles, but must report all the information. Although accounting standards do include some biases (such as conservatism and nonrecognition of research and development assets), they relate to matters that are not under management's discretion, and users—aware of the biases—can adjust for them.

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