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An Investigation of the Information Content of (Certain) Social Responsibility Disclosures

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This study addresses the relevance of certain social responsibility disclosures of firms to investors by empirically assessing their impact on security returns. The results of this investigation of the information content of voluntary disclosures may provide some insight into the possible effect of signals derived from a formal measurement and reporting system.[1]

Two related empirical tests of information content were conducted. The first analyzed returns for portfolios of securities selected from a broad spectrum of the market, whereas the second investigated the return performance of specific market segments. The next section of this paper discusses the social responsibility issue and reviews the literature. The following sections delineate the theoretical framework and methodology employed, depict the results of the tests, and draw conclusions and implications from the study.

The Social Accountability Issue

Several proposals for reporting social accountability data have been made (e.g., see American Accounting Association [1973], Beams and Fertig [1971], Bedford [1973], and Estes [1972]), but few empirical studies of such disclosures exist.

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[1] The possible relationship between market responses to voluntary disclosures and to disclosures prescribed by disclosure rules is discussed by Gonedes, Dopuch, and Penman [1976].

Longstreth and Rosenbloom (L&R) [1973] and Belkaoui [1972] conducted field studies to determine the extent to which certain social disclosures might influence investment decisions. L&R surveyed institutional investors and found that approximately 57 percent of the respondents indicated that they did consider social factors in addition to economic factors. Belkaoui presented financial statements, some of which contained pollution control data, to groups of bank officers, practicing accountants, and students. He concluded that the disclosure of pollution costs had an influence on investment decisions.

Market based studies were conducted by Spicer [1978] and Belkaoui [1976]. Spicer tested the association between pollution performance indexes and firm characteristics in the pulp and paper industry. He concluded that pollution control records are useful for assessing firms' total and systematic risks. Belkaoui investigated security price changes in the months surrounding the date of disclosure of firms' pollution expenditures and concluded that the price behavior of the group of firms which made disclosures was different from the price behavior of firms which did not make disclosures.

Hence, empirical studies on the actual impact of social accountability data have been limited to pollution control disclosures. In this study, I examine the impact of additional disclosure categories on security returns. The categories are listed in table 1.

Theoretical Framework

This study relies on the assumption that capital markets are efficient, in which case the information content of news announce-

TABLE 1

Number of Firms in Sample Making Social Responsibility Disclosures (n=287)

Year	Type	Category				
		Environmental	Fair Business	Personnel	Community	Product
1971	Monetary	33	0	0	4	1
	Nonmonetary .	94	43	23	34	38
	Total	127	43	23	38	39
1972	Monetary	36	0	0	4	1
	Nonmonetary .	99	61	38	43	39
	Total	135	61	38	47	40
1973	Monetary	60	5	5	24	1
	Nonmonetary .	63	75	62	53	14
	Total	123	80	67	77	15
1974	Monetary	73	8	3	33	2
	Nonmonetary .	92	99	91	50	37
	Total	165	107	94	83	39
1975	Monetary	99	16	13	29	3
	Nonmonetary .	90	158	109	76	131
	Total	189	174	122	105	134

ments will be immediately and unbiasedly impounded into security prices. Let $\tilde{R}_{it}$ be a random variable representing the rate of return on security i in period t, and $\tilde{\theta}_{it}$ a random variable representing a potential source of information about security i in period t. (Tildes denote random variables.) If $\tilde{\theta}_{it}$ does in fact have information content, the conditional distribution function of $\tilde{R}_{it}$ should not be the same for all values of $\tilde{\theta}_{it}$:

$$G(\tilde{R}_{it}|\theta^1_{it}) \neq G(\tilde{R}_{it}|\theta^2_{it}), \tag{1}$$

where G represents the distribution function, and the superscripts represent different signals from the information source which become available after capital market equilibrium is established at time t. Furthermore, if we assume the distribution function of security returns is normal, the inequality is implied by:

$$E(\tilde{R}_{it}|\theta^1_{it}) \neq E(\tilde{R}_{it}|\theta^2_{it}), \text{ or} \tag{2}$$

$$Var(\tilde{R}_{it}|\theta^1_{it}) \neq Var(\tilde{R}_{it}|\theta^2_{it}), \tag{3}$$

where E represents expected value and Var represents variance (for further elaboration see Gonedes [1975]).[2] The information source of concern for this study is firms' social responsibility disclosures contained in annual reports.

Data Selection

The sample consisted of annual reports of *Fortune 500* companies issued for fiscal years ending between May 1, 1970 and April 30, 1976.[3] The specific firms which compose the *Fortune 500* change from year to year, and only those firms which were listed for the entire time period covered by the study were included in the sample. This restriction was necessary to insure that disclosure data would be available for all sample firms each year. The second test discussed below involved a longitudinal study and used all five years of data for each firm.

The sample was further constrained to those firms for which monthly prices and dividends were available continuously from January 1964 to August 1976. The *Compustat Price, Dividends, Earnings* (*PDE*) tape was used for these data. A total of 287 firms satisfied both conditions.

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[2] I assume the return-generating function of all equity securities is expressed by the capital asset pricing model:

$$E(\tilde{R}_{it}) = E(\tilde{R}_{zt}) + \beta_{it}[E(\tilde{R}_{mt}) - E(\tilde{R}_{zt})],$$

where E is the expected value operator, $\tilde{R}_{it}$ is the return on security i in period t, $\tilde{R}_{zt}$ is the return on portfolio z in period t, with $\beta_{zt} = 0$, $\tilde{R}_{mt}$ is the return on the market portfolio in period t, and β_{it} is the systematic risk of security i in period t.

[3] The summary of firms' disclosures prepared by Ernst & Ernst [1971–76] was used to identify specific firms making disclosures. The period used in the study coincides with the periods used by Ernst & Ernst.

The techniques used to select the sample limit the generalization of results. Firms included in the study tend to be among the larger, more stable firms in the market and all are listed on the New York Stock Exchange. Since these firms' securities constitute a large portion of the total value of all securities traded in the market, conclusions drawn from the study appropriately relate to investment decisions of a wide spectrum of market agents.

Table 1 specifies the number of firms making disclosures in each of the five categories used in the study. The disclosures were partitioned into two groups (monetary and nonmonetary) for each category. Monetary disclosures possess the inherent quality of being cross-sectionally comparable, whereas nonmonetary disclosures, even if quantified in other terms, frequently lack a common denominator. Consequently, these two groups of disclosures may differ with respect to information content.

Disclosures listed in table 1 are further partitioned according to the closing date of the firms' fiscal years.[4] Note that both the number of firms making disclosures and the ratio of monetary to nonmonetary disclosures (for most categories) have increased over this time period. For example, in 1971, 127 sampled firms made environmental disclosures and only thirty-three of these were monetary. In 1975, 189 firms made environmental disclosures and over half, ninety-nine, were monetary.

The environmental category includes disclosures related to such activities as pollution control, repair or protection of the environment, and conservation of natural resources. Fair business practices refer to employment and advancement of minorities (based on race and sex) and support for minority businesses. The personnel category involves activities related to employee health and safety and employee training. Community involvement consists of donations of cash, products, and services to the community and support of employee involvement in the community. The product category includes such activities as product safety and improvement for consumer welfare. Examples of typical disclosures for the various categories are reproduced in the Appendix.

Methodology: Test 1

If a perfectly controlled experiment were possible, one could test for inequality of return functions by using the same securities and altering only the signal produced by the information source. Unfortunately, only one unique signal is possible for a specific firm in a given time period. If one relies on the empirical validity of the Capital Asset Pricing Model, this problem may be solved by aggregating firm data

[4] Firms with closing dates from April 30, 1970 to May 1, 1971 are identified as 1971 firms, and so forth.

into homogeneous groups. The method used consists of building portfolios of firms according to the particular signals to be tested. The general mechanics and advantages of this approach are discussed in Gonedes [1974, 1975].

Firms were first grouped according to the type and category of disclosure made. In the rest of this paper, these partitions will be represented as group 1 (monetary) and 2 (nonmonetary), and category E (environmental), F (fair business), Pe (personnel), C (community), and Pr (product). Firms in the sample which did not make disclosures were further partitioned by industry into group 3 (firms from industries represented in groups 1 and 2) and group 4 (firms from all other industries). This partition was considered useful because various disclosures may be related to underlying economic or institutional conditions in some industries, but not in others. The *Compustat* four-digit industry classification was used to partition the firms.

The actual construction of the portfolios proceeded in the following manner. (1) For the environmental category, thirty firms which made monetary disclosures in 1971 were selected at random, and the portfolio beta was computed as the arithmetic mean of the individual securities' betas.[5] The simple market model was used to compute individual beta values. The monetary return series for each firm was computed for sixty months prior to the first portfolio formation month using the natural logarithm of the price relative adjusted for dividends. Fisher's arithmetic index was used as a proxy for the market portfolio (see Fisher [1966] for derivation of the index).

(2) The monthly return series for the portfolio was computed as the arithmetic mean of the monthly returns for each component security:

$$R_{pt} = \frac{1}{n}\sum R_{it}, \tag{4}$$

where R_{pt} is the return on portfolio p in month t and n is the number of securities in the portfolio ($n \equiv 30$). The period used to compute the monthly return series consisted of the nine months prior to the end of each firm's fiscal year and three months subsequent to the end of the fiscal year.

The use of the twelve-month period beginning with the ninth month prior to the close of the firms' fiscal years seems logical, since nearly all firms issue their annual reports before the end of the third month following the close of the fiscal year. Since alternative and more timely sources of information exist in addition to annual reports, it is reasonable to assume that the information content of the reports will be impounded in security prices in the months prior to the release of the annual reports (for additional discussion, see Gonedes [1975]).

[5] The procedure used to compute portfolio betas is one of several possible methods. This method was selected because it has been tested in previous research (Gonedes [1975]) and because it facilitates the creation of equal beta portfolios.

(3) Identical procedures were used to produce a portfolio of thirty firms which made monetary disclosures for each of the four periods 1972–75, except that thirty-six firms were randomly selected and six firms were subsequently removed to produce a portfolio with the same beta value as the 1971 portfolio.[6]

(4) Steps 1–3 resulted in a portfolio return series of sixty months for the years 1971 through 1975. The procedure produced returns for firms which made environmental monetary disclosures, although any one firm may not have been a part of the portfolio for the entire sixty months. Reconstruction of the portfolio each period was necessary to ensure beta stability, since the parameters of the regression model may not be stable over time (see Gonedes [1973*a*]).

(5) Steps 1–4 were repeated for firms in groups 2–4. The same techniques were used to ensure a portfolio return series of sixty months with a beta value equal to that of the monetary disclosure portfolio.

These same steps were also repeated for each of the other categories, with two exceptions. First, portfolios were not constructed for group 1 in each category because of the small number of firms making monetary disclosures in these categories. Second, the small numbers of firms making any disclosures in category *C* in 1971 and *Pr* in 1973 forced their elimination in constructing the portfolios for these categories. Therefore, the portfolio return series for each of these categories consisted of only forty-eight months.

This portfolio construction process yielded sixteen portfolios distributed among the five social responsibility disclosures, as shown in table 2. The portfolios will be referred to in the remainder of this study as *E*1–4, *F*1–4, etc., as listed in the table. The estimated portfolio betas ($\hat{\beta}$) are also indicated.

HYPOTHESES

The null hypothesis of no information content for each of the disclosure category-group combinations may be represented as:

$$H_0\colon G(\tilde{R}_i|\theta_i) = G(\tilde{R}_j|\theta_j) \tag{5}$$

where $\tilde{R}_{i(j)}$ is the return on the $i(j)$th portfolio of each category, $\theta_{i(j)}$ is the disclosure associated with the i (j)th portfolio, $i \neq j$, and either i or j is a disclosure portfolio.

RESULTS

The estimated portfolio means and variances are presented in table 2. The average monthly returns for the period tested are all close to

[6] This procedure results in a strictly nonrandom sample. However, the portfolios should still be representative of the population, since the selection process should not bias the portfolio returns.

TABLE 2
Portfolio Composition and Return Data

Category	Portfolio	Disclosure Type	Return Months	$\hat{\beta}$	$E(R)$	Var (R)
Environment	$E1$	Monetary	60	.9342	.002077	.0027
	$E2$	Nonmonetary	60	.9346	−.001255	.0021
	$E3$	No Disclosure[a]	60	.9344	−.001698	.0021
	$E4$	No Disclosure[b]	60	.9336	−.004722	.0030
Fair Business	$F1$	Nonmonetary	60	.8951	.003318	.0021
	$F2$	No Disclosure[a]	60	.8940	.001635	.0022
	$F3$	No Disclosure[b]	60	.8944	.000047	.0024
Personnel	$Pe1$	Nonmonetary	48	.8825	−.000598	.0016
	$Pe2$	No Disclosure[a]	48	.8824	.000393	.0019
	$Pe3$	No Disclosure[b]	48	.8829	−.003857	.0019
Community	$C1$	Nonmonetary	60	.8726	.002443	.0022
	$C2$	No Disclosure[a]	60	.8726	−.000178	.0015
	$C3$	No Disclosure[b]	60	.8729	−.000878	.0026
Product	$Pr1$	Nonmonetary	48	.8859	.000158	.0028
	$Pr2$	No Disclosure[a]	48	.8870	.000122	.0022
	$Pr3$	No Disclosure[b]	48	.8872	.000982	.0022

[a] Firms from same industries as prior portfolio(s) of the same category.
[b] Firms from industries other than prior portfolio(s).

zero, with seven of the sixteen portfolios producing negative returns for the test period. Three of the disclosure categories (E, F, and C) had the same rankings within categories, with the disclosure portfolio(s) demonstrating the highest return(s) and the last portfolio the lowest return. In the personnel category, the second portfolio had the highest return, and in the product category, the last portfolio had the highest.

A series of t-tests were conducted on all paired differences between portfolio means for each category. A series of tests were conducted on all paired variance ratios for each category as well, using the F-ratio as the test statistic.[7] The results of these tests are presented in table 3.

The results of the t-tests indicate that no significant differences are evident between the portfolio means at $\alpha = .40$. The probability associated with the t-tests is at or below .40 in fifteen of the sixteen tests.

The tests of variances also indicate that the ratios are insignificant at $\alpha = .10$ in all but one case, and this case involves two no-disclosure portfolios. Consequently, the portfolio analyses did not produce evidence to warrant rejection of the null hypotheses. That is, there was no evidence that social responsibility disclosures possess information content for the firms used in this investigation.

These results are consistent with either of two explanations. First, the disclosures may possess no information content. Investors may

[7] Strictly speaking, equality of portfolio variances is implied by equality of portfolio betas only when the portfolios are minimum variance portfolios.

discount the disclosures as being of no predictive value. Alternatively, the aggregation process used in this approach may have averaged out effects on specific subsets of disclosure firms. Individual returns may be conditional upon disclosures and additional factors associated with various market segments.

Methodology: Test 2

A second examination of security returns was conducted to test these alternative explanations. Three factors which were considered to have potential impact on responses to social disclosures were selected for inclusion in the study. These factors were the industry to which the firm belonged, the sign of the firm's excess earnings in the year of the disclosure, and the year the disclosure was made.

Industry is an important attribute for consideration, since the nature of and motivation for disclosures vary according to the production-investment alternatives available to individual firms. These alternatives are likely to be more similar among firms in one industry than between firms in different industries.

Similarly, previous research (e.g., Ball and Brown [1968] and Gonedes [1974]) has shown that earnings numbers possess significant information content in that positive excess earnings tend to be associated with positive abnormal returns and vice versa.

Another variable of potential importance for the analysis is the relevance of the disclosure over time. The time period used in the

TABLE 3
Results of Portfolio Tests

Portfolios	$E(R_i) - E(R_i)$	t	$d.f.$	F	$d.f.$
*E*1–*E*2	.003332	.3725	118	1.286	(59, 59)
*E*1–*E*3	.003775	.4221	118	1.286	(59, 59)
*E*1–*E*4	.006799	.6976	118	1.111	(59, 59)
*E*2–*E*3	.000443	.0529	118	1.000	(59, 59)
*E*2–*E*4	.003467	.3760	118	1.429	(59, 59)
*E*3–*E*4[a]	.003024	.3280	118	1.429	(59, 59)
*F*1–*F*2	.001683	.1988	118	1.048	(59, 59)
*F*1–*F*3	.003271	.3777	118	1.143	(59, 59)
*F*2–*F*3[a]	.001588	.1814	118	1.091	(59, 59)
*Pe*1–*Pe*2	−.000991	−.1161	94	1.188	(47, 47)
*Pe*1–*Pe*3	.003259	.3727	94	1.188	(47, 47)
*Pe*2–*Pe*3[a]	.004250	.4777	94	1.000	(47, 47)
*C*1–*C*2	.002621	.3338	118	1.467	(59, 59)
*C*1–*C*3	.003321	.3713	118	1.182	(59, 59)
*C*2–*C*3[a]	.000700	.0847	118	1.733	(59, 59)
*Pr*1–*Pr*2	.000036	.0035	94	1.273	(47, 47)
*Pr*1–*Pr*3	−.000824	−.1009	94	1.273	(47, 47)
*Pr*2–*Pr*3[a]	−.000860	−.0898	94	1.000	(47, 47)

[a] Both no-disclosure portfolios. These results were included for comparative purposes as a matter of interest.

present study (1971–75) represents a relatively lengthy period, given the dynamic nature of the social responsibility environment. Investor assessments of the usefulness of information may not have been uniform across years.

The segmentation process did not use portfolios, because the large number of possible segments which would result from partitioning the firms according to industry (I), excess earnings (EE), fiscal year (Y), and five disclosure categories would necessitate numerous portfolios of few securities. Instead, a technique reported by Sonquist, Baker, and Morgan [1971] was used. This technique is particularly suited to the present study, since it is designed for an intervally scaled dependent variable and nominally or ordinally scaled independent variables. Furthermore, it does not assume additivity.

The procedure is an iterative process which partitions a group, through a series of binary splits, into subgroups. At each iteration, the subgroup with the largest sum of squares is selected for splitting. This group is split into two mutually exclusive subgroups according to the categories of the independent variable which maximize the between sum of squares.

Excess returns, computed via the simple market model, were used as the dependent variable in order to control for systematic risk. The same return data used in the portfolio analysis were used for this analysis.

The excess return series for each firm-year (1971–75) was computed using the regression parameters determined in the portfolio study. For each month included in the analysis, the excess return was computed as:

$$\tilde{e}_i = \tilde{R}_{it} - \alpha_i - \beta_i \tilde{R}_{mt} \tag{6}$$

where $\tilde{R}_{it}$ is the return on security i in month t, α and β are regression parameters computed over the sixty months prior to the firm-year being analyzed, $\tilde{R}_{mt}$ is the return on the market portfolio in month t, and $\tilde{e}_i$ is the excess return on security i. The excess monthly returns for each firm were next summed over the twelve months beginning with the ninth month prior to the close of each fiscal year used in the study to form the cumulative excess return for that year:

$$CER = \sum_{t=1}^{12} \tilde{e}_{it}. \tag{7}$$

Social responsibility disclosures, industry, fiscal year, and excess earnings were independent variables. Social responsibility disclosures were classified by disclosure type—(1) no disclosure, (2) nonmonetary, (3) monetary. Fiscal years were classified 1–5 (1971–75). Industries were classified into four groups according to the *Compustat* two-digit code of those industries which were represented by at least twenty-five firms in the study. The four industries were (1) foods—2200, (2) chemicals—

2800, (3) industrial manufacturing—3500, and (4) transportation manufacturing—3700.

Specification of a firm's excess earnings requires a model of the process generating earnings. One model which has produced successful results when compared with others is a market-index model using first differences:

$$\Delta\tilde{E}_{it} = \alpha_i + \beta_i \Delta\tilde{E}_{mt} + \tilde{e}_{it}, \tag{8}$$

where ΔE_{it} is the first difference in the income of firm i in year t, α_i and β_i are regression parameters, ΔE_{mt} is the first difference in the income of the market portfolio in period t, and e_{it} is the excess earnings of firm i in period t.

Tests of this model have shown that the model is descriptive of firms' earnings processes (Gonedes [1973*b*]). The model is more descriptive if the income numbers are weighted by the value of the firm's common equity. Accordingly, the value of ΔE_i was computed for each firm-year using the first-difference of the ratio of income available for common to common equity:

$$\Delta E_{it} = (I_{it}/C_{i,t-1}) - (I_{i,t-1}/C_{i,t-2}) \tag{9}$$

where I_{it} is the income available for common for firm i in period t, and $C_{i,t-1}$ is the common equity of firm i at the end of period t-1. The *Compustat Annual Industrial* tape was used to determine the value of each variable.

The market index was computed as:

$$\Delta E_{mt} = \sum [I_{it}(C_{i,t-1}/C_{t-1}) - I_{i,t-1}(C_{i,t-2}/C_{t-2})], \tag{10}$$

where the summation is across all NYSE firms on the *Compustat* tape for year t. The values of ΔE_{it} were regressed against the values of ΔE_{mt} for the fourteen years prior to the beginning of each year of the analysis period. The resulting regression parameters were then used to determine the excess earnings for each firm for the years under examination. The sign of the excess earnings—(1) negative or (2) positive—was used as the independent variable.

The intuitive explanation for the validity of the model is that cross-section dependencies exist in the economy which affect earnings just as they affect security prices. Changes in production, technology, government policy, and the general price level are some examples of factors which may affect the earnings numbers of all firms in the economy (Gonedes [1973*b*]).

HYPOTHESES

The null hypothesis of no information content for social responsibility disclosures for each market segment may be represented as:

$$H_0\colon E(CER_i|\theta_i) = E(CER_j|\theta_j), \tag{11}$$

where $CER_{i(j)}$ is the cumulative excess return for the $i(j)$th group of a market segment, $\xi_{i(j)}$ is the disclosure associated with the $i(j)$th group of a market segment, and $i \neq j$.[8]

RESULTS

The iteration process resulted in eighteen splits which partitioned the sampled firms into various market segments (illustrated in fig. 1). The sequence of splits denotes the relative importance of the independent variables for explaining the variation in the combined group. Excess earnings was the most important variable, with positive earnings being associated with positive excess returns. These results are consistent with earlier findings (e.g., Ball and Brown [1968] and Gonedes [1973*b*]). Subsequent splits occurred on the year and industry variables. These factors were, in most cases, of more importance in explaining the excess return variations than were the disclosure variables.[9] In only one case (split 7) did a disclosure category precede a split on a nondisclosure variable which had not previously entered into the model. The order of splits suggests that the disclosure variables are of secondary importance, but may be significant for certain segments of the market in specific years. The nonsymmetrical shape of the tree diagram indicates nonuniform assessments of information content for the disclosures across all firms and/or time periods.[10]

The statistical significance of each split was examined via a t-test of the difference between the means of the subgroups resulting from each split. Results are presented in table 4. All of the splits in figure 1 are statistically significant for explaining the variation in the excess returns of the preceding group at $\alpha \leq .10$.

Table 4 indicates the classification of the variables and the estimated means of each subgroup. Several of the variables had more than two classes, and thus the binary splits combined classes for these variables. The class(es) with the lowest excess returns is always listed first in the table. In most cases, the firms which made social responsibility disclosures outperformed those which did not. Splits 12, 13, and 15 demonstrated results opposite to the other splits, and splits involving environmental disclosures indicate that monetary disclosure firms outperformed both no-disclosure and nonmonetary disclosure firms.

[8] Information content could also be evaluated by comparing group variances. The ratios of the group variances of the splits derived in the study were not significant at $\alpha = .20$, and discussion is omitted to conserve space.

[9] The splitting procedure identifies multicollinearity by analysis of changes in the ratio of between sum of squares to total sum of squares for each independent variable at each iteration. Multicollinearity did not appear to be present among any of the variables used in this study.

[10] The procedure can also be used as input for a multiple regression program designed for categorical variables (see Andrews et al. [1973]). Since the present study is descriptive in nature, the determination of a predictive model was not considered of primary importance.

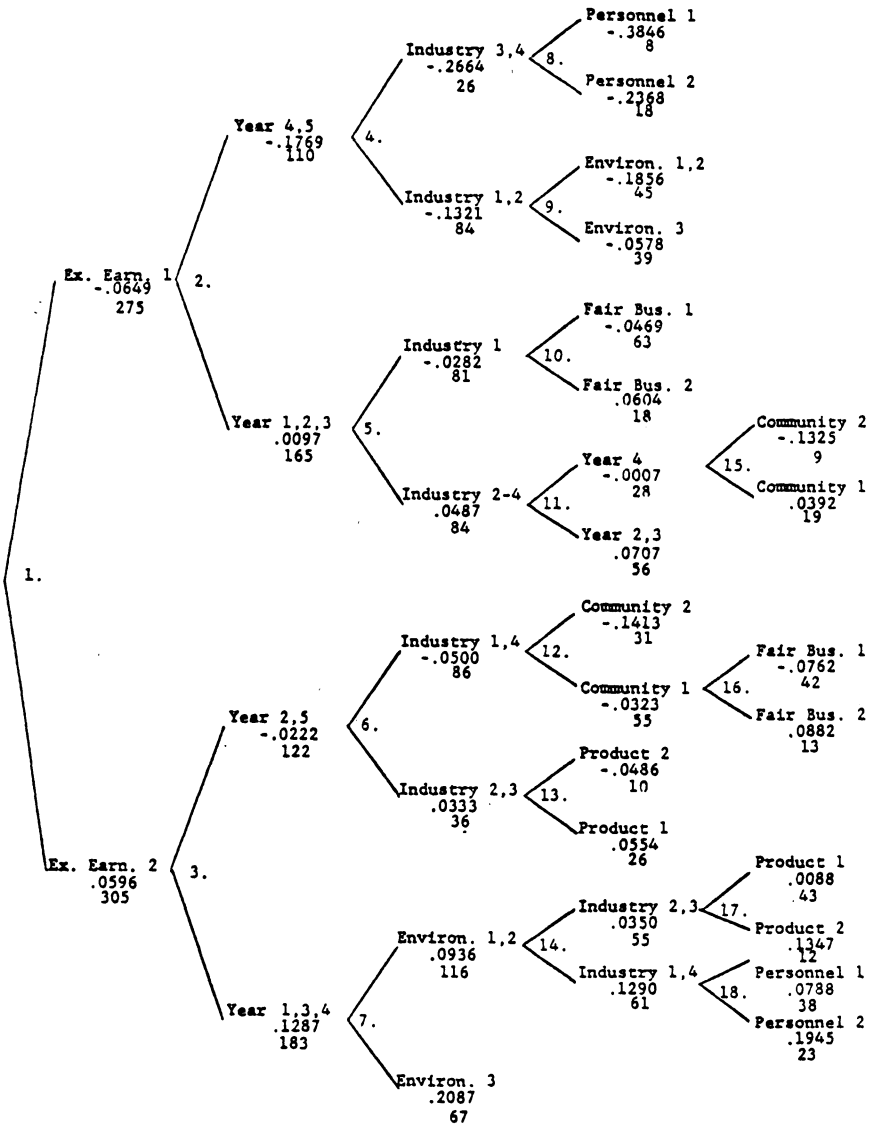

FIG. 1.—Market splits derived from binary splits of sampled firms. The number(s) after the variable name indicate(s) the class(es) of the variable in the split. The first number below the variable indicates the mean cumulative excess return for the split, and the second number indicates the number of observations in the split.

All of the disclosure categories used in this study were significant for a specific market segment, in spite of the fact that monetary disclosures were not considered in four of the five categories. The specific market segments which revealed significant responses are summarized in table 5. From this table, one may observe the various attributes of the market segments which were important for this study. For example, informa-

TABLE 4
Results of Market Segment Tests

Split No.	Category	Class	Observations	Mean	*S.d.*	*t*	*d.f.*
(1)	Excess Earnings	1	275	−.0649	.2745	5.53[a]	578
		2	305	.0596	.2861		
(2)	Year	4, 5	110	−.1769	.3100	4.73[a]	273
		1–3	165	.0097	.2367		
(3)	Year	2, 5	122	−.0222	.2885	6.34[a]	303
		1, 3, 4	183	.1287	.2651		
(4)	Industry	3, 4	26	−.2664	.2858	2.45[a]	108
		1, 2	84	−.1321	.2931		
(5)	Industry	1	81	−.0282	.2327	2.81[a]	163
		2–4	84	.0487	.2344		
(6)	Industry	1, 4	86	−.0500	.2962	2.16[a]	120
		2, 3	36	.0334	.2638		
(7)	Environment	1, 2	116	.0936	.2653	3.504[a]	181
		3	67	.2087	.2465		
(8)	Personnel	1	8	−.3846	.2395	1.904[b]	24
		2	18	−.2368	.1787		
(9)	Environment	1, 2	45	−.1856	.3196	2.042[a]	82
		3	39	−.0578	.2321		
(10)	Fair Business	1	63	−.0469	.2445	2.165[a]	79
		2	18	.0604	.2340		
(11)	Year	1	28	−.0007	.2684	2.03[a]	82
		2, 3	56	.0707	.2024		
(12)	Community	2	31	−.1413	.3133	1.767[b]	84
		1	55	−.0323	.2894		
(13)	Product	2	10	−.0486	.2331	1.740[b]	34
		1	26	.0554	.2552		
(14)	Industry	2, 3	55	.0350	.2321	2.48[a]	114
		1, 4	61	.1290	.2775		
(15)	Community	2	9	−.1325	.2689	2.108[a]	27
		1	19	.0392	.2557		
(16)	Fair Business	1	42	−.0760	.2926	1.920[b]	53
		2	13	.0882	.3476		
(17)	Product	1	43	.0088	.2345	1.977[b]	53
		2	12	.1347	.1927		
(18)	Personnel	1	38	.0788	.2682	1.890[b]	59
		2	23	.1945	.2295		

[a] Significant at $\alpha = .05$.
[b] Significant at $\alpha = .10$.

tion content was demonstrated in environmental disclosures for firms with positive excess earnings in 1971, 1973, and 1974, regardless of industry or other social responsibility disclosures. Industry attributes were important, along with excess earnings and year, for nearly all significant disclosures, and other social disclosures were important in three cases.

These results suggest that the information content of the disclosures varies across firms, once industry classification, the sign of the excess earnings of the firm, and the fiscal year in which the disclosures were made are taken into account. In comparing these results with those of

TABLE 5
Significant Disclosure Categories by Market Segment

Category	Split No.	Market Segment			
		Excess Earnings	Year	Industry	Other Disclosures
Environment	7	Positive	1971, 73, 74	None	None
	9	Negative	1974, 75	Foods, Chemicals	None
Fair Business	10	Negative	1971–73	Foods	None
	16	Positive	1972, 75	Foods, Transport.	Community
Personnel	8	Negative	1974, 75	Industrial, Transport.	None
	18	Positive	1971, 73, 74	Foods, Transport.	Environment
Community	12	Positive	1972, 75	Foods, Transport.	None
	15	Negative	1971	Chemicals, Industrial, Transport.	None
Product	13	Positive	1972, 75	Chemicals, Industrial	None
	17	Positive	1971, 73, 74	Chemicals, Industrial	Environment

the first test, note that the sample of firms had to be partitioned into segments before the disclosures were observed to be significant. Apparently, combining the segments, as in the first test, washes out the effects of the disclosures on security returns.[11]

The findings are logical in light of (1) the differences in production-investment alternatives of firms in various industries, (2) the differences in motivation for disclosure by firms with differing performance records, and (3) the dynamic nature of the legal and social environment in which disclosures are made.

Summary

This study was an investigation of the information content of firms' voluntary social responsibility disclosures. Two tests were performed involving various groupings of firms according to the nature of the disclosures made in five disclosure categories. These tests permitted analysis of the information content of the disclosures for an unsegmented sample of *Fortune 500* firms and for market segments partitioned by the sign of firms' excess earnings, by industry, and by fiscal year.

The results of the tests are consistent with the statement that the information content of firms' social responsibility disclosures is conditional upon the market segment with which the firm is identified. These findings suggest that it may be important to evaluate information content by analyzing the impact of the signals on market segments (or segments identified by firm-specific characteristics), rather than on a general cross-section of firms.

[11] Factors used in the present study to segment the market are obviously a selection of numerous possible factors. The results of tests using alternative factors might be more or less significant than the results of the present study. Identification of specific factors was not as important in this research as identification of information content. Analysis of factors which may affect the information content of disclosures remains a topic for future research.

APPENDIX

Examples of Social Responsibility Disclosures

Examples of typical disclosures for the various categories are reproduced below to enable the reader better to grasp the nature of the information reported. These disclosures were selected from 1975 annual reports as reported by Ernst & Ernst [1975].

Environmental. " . . . collecting mains at the coke oven complex were replaced at a cost of $2.6 million, resulting in a reduction of air emissions . . . . The company also completed a $2.7 million biological water treatment plant as part of an overall water pollution abatement system." (Jim Walter Corporation)

Fair business. "The company now has approximately 17,200 employees from minority groups and 26,850 women, representing 10.9 percent and 16.9 percent respectively of the total IBM population in the U.S." (IBM)

Personnel. "Olin's determined safety drive produced a new safety record for the company in 1975; an accident frequency rate of only 0.82 compared with the previous record of 1.39 set in 1974." (Olin)

Community. "In 1975 Firestone Scholarships with a potential value of nearly $500,000 were awarded to 44 sons and daughters of Firestone employees." (Firestone)

Product. "Along with programs to increase consumer satisfaction with product quality and performance, Celanese maintains programs designed to reduce safety problems arising from the use or handling of its products." (Celanese)

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