The Corporate Social Performance and Corporate Financial Performance Debate : Twenty-Five Years of Incomparable Research

Jennifer J. Griffin and John F. Mahon

Business Society 1997 36: 5

DOI: 10.1177/000765039703600102

The Corporate Social Performance and Corporate Financial Performance Debate

Twenty-Five Years of Incomparable Research

JENNIFER J. GRIFFIN
JOHN F. MAHON
Boston University

This article extends earlier research concerning the relationship between corporate social performance and corporate financial performance, with particular emphasis on methodological inconsistencies. Research in this area is extended in three critical areas. First, it focuses on a particular industry, the chemical industry. Second, it uses multiple sources of data—two that are perceptual based (KLD Index and *Fortune* reputation survey), and two that are performance based (TRI database and corporate philanthropy) in order to triangulate toward assessing corporate social performance. Third, it uses the five most commonly applied accounting measures in the corporate social performance and corporate financial performance (CSP/CFP) literature to assess corporate financial performance. The results indicate that the a priori use of measures may actually predetermine the CSP/CFP relationship outcome. Surprisingly, *Fortune* and KLD indices very closely track one another, whereas TRI and corporate philanthropy differentiate between high and low social performers and do *not* correlate to the firm's financial performance.

INTRODUCTION

Exploring the relationship between corporate social performance and corporate financial performance has been a lively confrontation since Milton Friedman's (1962/1970) challenge that "a corporation's social responsibility is to make a profit." Friedman's comments added fire and intellectual challenge to the debate and triggered additional interest in

BUSINESS & SOCIETY, Vol. 36 No. 1, March 1997 5-31

either proving or disproving the relationship between social performance and financial performance. Edwin Locke, a noted organizational theorist at the University of Maryland, in a recent *Boston Globe* article ("Profit Whatever the Cost?" 1996) argued essentially the same point as Friedman when he noted that the only responsibility of a business is to its shareholders. So it would seem that this debate is far from over, and that it is certainly not settled in either the academic or practitioner community. Although numerous researchers have explored the empirical relationship between corporate social performance (CSP) and corporate financial performance (CFP), no definitive consensus exists. The results have often been contradictory, even within a given analysis. Some researchers have found in their research only a negative relationship (Bromiley and Marcus, 1989; Davidson, Chandy, and Cross, 1987; Davidson and Worrell, 1988; Eckbo, 1983; Hoffer, Pruitt, and Reilly, 1988; Jarrell and Peltzman, 1985; Pruitt and Peterson, 1986; Shane and Spicer, 1983; Strachan, Smith, and Beedles, 1983; Vance, 1975; Wier, 1983); others have found an inconclusive relationship (Alexander and Buchholz, 1978; Abbott and Monsen, 1979; Aupperle, Carroll, and Hatfield, 1985; Freedman and Jaggi, 1986; Ingram and Frazier, 1983). The numbers of researchers finding a negative relationship is impressive. However, it needs to be pointed out that the majority of negative relationships were found by researchers investigating the impact on the stock market of potential corporate illegalities (e.g., antitrust suits) or product problems such as automotive and drug recalls. Several investigators have found contradictory results on this relationship within their own research—in some cases reflecting a positive *and* a no effect/inconclusive relationship (Anderson and Frankle, 1980; Freedman and Jaggi, 1982; Fry and Hock, 1976) or a positive *and* negative relationship (Chen and Metcalf, 1980; Cochran and Wood, 1984; Coffey and Fryxell, 1991; Holman, New, and Singer, 1990; Kedia and Kuntz, 1981; Lerner and Fryxell, 1988; Marcus and Goodman, 1986; McGuire, Sundgren, and Schneeweis, 1988). The "good" news is that the largest number of researchers have found a positive relationship (Belkaoui, 1976; Bowman, 1978; Bowman and Haire, 1975; Bragdon and Marlin, 1972; Cowen, Ferreri, and Parker, 1987; Fry, Keim, and Meiners, 1982; Hart and Ahuja, 1994; Heinze, 1976; Ingram, 1978; Johnson and Greening, 1994; Morris, Rehbein, Hosseini, and Armacost, 1990; Moskowitz, 1972, 1975; Newgren et al., 1985; Parket and Eilbert, 1975; Riahi-Belkaoui, 1992; Rockness, Schlachter, and Rockness, 1986; Spencer and Taylor, 1987; Spicer, 1978; Sturdivant and Ginter, 1977; Waddock and Graves, 1994; Wokutch and Spencer, 1987).

Even though there is hope in the large number of studies that have shown a positive relationship, academics and practitioners alike should be concerned with the variability and inconsistency in these results. Some of the reasons for these contradictory results stem from conceptual, operationalization, and methodological differences in the definitions of social and financial performance (Cochran and Wood, 1984; Ullmann, 1985; Waddock and Mahon, 1991; Wartick and Cochran, 1985; Wood, 1991). Table 1 provides a listing of all of the research reviewed for this article, along with the statistical results of the relationships observed between CFP and CSP. In this analysis we will specifically focus on the methodological inconsistencies that have hindered previous research. There is one major difficulty in doing this type of research that is nearly impossible for any researcher to overcome and warrants a comment here. As we obtained and reviewed the articles published on this topic, additional articles continue to be published. As a result, it is impossible to include each and every article on this topic in this or any analysis. Indeed, at the time of the writing of this specific version of the article, the upcoming meetings of the Academy of Management include several presentations on this topic. However, the framework that we are proposing is useful in evaluation of future articles as they become available, and those other articles that we have not included in this analysis.

LITERATURE REVIEW

Earlier theoretical articles (Ullmann, 1985; Wood, 1991) and empirical research reviews (Arlow and Gannon, 1982; Cochran and Wood, 1984; Frooman, 1994) identified numerous empirical research studies that have investigated the relationship between CFP and CSP. These previously identified articles were augmented by expanding the sample to include articles in *Research in Corporate Social Performance and Policy* Volumes 1-12, the *International Association for Business and Society Proceedings*, and recent articles in the *Academy of Management Journal*. Those articles describing only corporate social performance or corporate financial performance were not included in this analysis as the research focus herein is targeted toward better understanding of the *relationship between and among* corporate social performance and corporate social performance variables. In total, in the last 25 years, 51 articles that analyzed the relationship between corporate social performance and corporate financial performance were reviewed. Each of these articles was reviewed for the population tested, data source(s), methodologies employed, control

Table 1
Correlations Between Corporate Financial Performance and Corporate Social Performance

Positive	*No Effect/Inconclusive*	*Negative*
1970s (16 studies)		
Moskowitz (1972)[a]	Fogler and Nutt (1975)[b]	Vance (1975)[a]
Bragdon and Marlin (1972)[a]	Fry and Hock (1976)[a]	
Bowman and Haire (1975)[ac]	Alexander and Buchholz (1978)*	
Parket and Eilbert (1975)[a]	Abbot and Monsen (1979)[a]	
Moskowitz (1975)[a]		
Belkaoui (1976)*		
Fry and Hock (1976)[a]		
Heinze (1976)[a]		
Sturdivant and Ginter (1977)*[c]		
Ingram (1978)*		
Bowman (1978)*		
Spicer (1978)*		
1980s (27 studies)		
Anderson and Frankle (1980)*	Anderson and Frankle (1980)*	Chen and Metcalf (1980)*
Chen and Metcalf (1980)*	Freedman and Jaggi (1982)*	Kedia and Kuntz (1981)*
Kedia and Kuntz (1981)*	Ingram and Frazier (1983)*	Eckbo (1983)*
Fry, Keim, and Meiners (1982)*	Aupperle, Carroll, and Hatfield (1985)[b]	Strachan, Smith, and Beedles (1983)*
Freedman and Jaggi (1982)*	Freedman and Jaggi (1986)[b]	Shane and Spicer (1983)*

	Cochran and Wood (1984)*	Wier (1983)[b]
	Newgren et al. (1985)*	Cochran and Wood (1984)*
	Marcus and Goodman (1986)*	Jarrell and Peltzman (1985)*
	Rockness, Schlachter, and Rockness (1986)*	Marcus and Goodman (1986)*
	Cowen, Ferreri, and Parker (1987)*	Pruitt and Peterson (1986)*
	Spencer and Taylor (1987)*	Davidson, Chandy, and Cross (1987)*
	Wokutch and Spencer (1987)*	Davidson and Worrell (1988)*
	Lerner and Fryxell (1988)*	Hoffer, Pruitt, and Reilly (1988)*
	McGuire, Sundgren, and Schneeweis (1988)*	Lerner and Fryxell (1988)*
		McGuire Sundgren, and Schneeweis (1988)*
		Bromiley and Marcus (1989)*
1990s (8 studies)		
	Holman, New, and Singer (1990)*	Hill, Kelley, and Agle (1990)*
	Morris et al. (1990)*	Holman, New, and Singer (1990)*
	Coffey and Fryxell (1991)*	Coffey and Fryxell (1991)*
	Riahi-Belkaoui (1992)*	
	Hart and Ahuja (1994)*	
	Johnson and Greening (1994)*	
	Waddock and Graves (1994)*	

a. informal, no statistical testing reported.
b. not statistically significant, $p > 0.10$.
c. curvilinear relationship, inverted U-shape.
*statistically significant, at least $p \leq 0.10$ level.

variables, corporate financial and social performance measures, results and significance level, findings, and reliability/validity testing. Ten additional articles that only analyzed the multiple dimensions of corporate social performance/responsibility were not included in this sample. From this in-depth review of the CSP/CFP literature, three key issues emerged: the focus on multi-industry samples, the multiple dimensions of corporate financial performance, and the need for multiple measures to assess corporate social performance.

Key Issues Identified in the Literature Review

The first issue identified in the literature is the continual focus on large, cross-sectional studies that incorporate many industries. Forty articles, more than 78% of all articles analyzed, selected populations with multiple industries. Only three CSP/CFP research groups since 1981 have focused on only one industry (Bromiley and Marcus, 1989; Davidson, Chandy, and Cross, 1987; Rockness, Schlachter, and Rockness, 1986)—and each study centered on the reaction of the stock market to illegal corporate actions. Despite numerous suggestions that "future research on this topic (CSP/CFP) needs to be conducted within specific industries" (Wokutch and Spencer, 1987: 74), and recognition that "accounting measures of financial performance are inadequate for researchers making large cross-sectional comparisons across industries" (Davidson and Worrell, 1990: 8), nearly all of the research has focused on multiple industries. By analyzing broad, cross-sectional data, the results may mask individual differences for measuring CSP and CFP based on the specific context of an industry. Industries exhibit special uniqueness in that the internal competencies or external pressures inherent in the industry create a "specialization" of social interests (Holmes, 1977; Ingram, 1978). Hence the internal and external pressures inherent in a given industry, such as governmental regulations, consumer-oriented nature of companies, and public visibility (Arlow and Gannon, 1982) are expected to be the same within an industry when one pursues multi-industry studies without further explanation or analysis. Because "the *issues change* and they *differ* for different industries" (Carroll, 1979: 501), this study, by focusing on a single industry, allows us to see if the same social issues are treated similarly. More importantly, the above discussion suggests that different industries face different configurations of stakeholders, with differing degrees of activism on issues. Wood and Jones (1995) have addressed the need for matching stakeholders with appropriate social and financial measures. Multi-industry studies serve to confound this particular rela-

tionship. Therefore, this article focuses on one industry to enhance internal validity rather than focusing on multiple industries for external validity. In addition, the focus on a single industry may allow for the development and recognition of specific patterns of social performance that may be specific to a single industry and its stakeholder patterns of action and involvement, and it also allows for a clearer recognition of different social performance by individual firms within the industry.

The second issue identified in the literature review is the multiple dimensions used to measure corporate financial performance (Davidson and Worrell, 1990; Kedia and Kuntz, 1981; Kohls, 1985; Newgren et al., 1985). Previous research has inconsistently used one or only a few measures to assess financial performance (for example, profitability measures such as net income [Friedman, 1962/1970], earnings per share [Vance, 1975], return to investors [Abbott and Monsen, 1979], and return on equity [Bowman and Haire, 1975]) based apparently on the criteria of convenience to the researcher and in terms of the ease of getting data for analysis. More recent researchers have used growth indices such as a 5-year return on equity (Cochran and Wood, 1984) or asset utilization measures such as return on assets (Wokutch and McKinney, 1991). Rather than using "convenient" measures, in this study we will use five of the most widely used financial performance measures in the academic literature that encompasses profitability, growth, and asset utilization.

Table 2 lists all of the financial measures used in the 51 studies reviewed for this analysis. For ease of listing, the financial measures have been sorted into one of six categories: profitability (11 measures), asset utilization (7 measures), growth (13 measures), liquidity (6 measures), risk/market measures (12 measures), and other (20 measures, including an "other" category with 11 measures in it). Only financial measures rather than market-derived measures will be used in this study because market measures may be assessing more than just the financial outcome of the organizations (Shane and Spicer, 1983). As can be seen in Table 2, researchers have used 80 different measures of corporate financial performance. Of those 80 financial measures, 57 measures have been used by only one researcher at one time (in Table 2 this is indicated by the number 1 under Total Number of Occurrences, and all of the 11 "Others" were used by a single researcher). This means that over 70% of financial performance measures were used only once. Without repeated use of the same measures, it is difficult to develop validity or reliability checks for most of the financial measures. Disregarding the market-derived measures and those measures that may be confounded with more popular measures (e.g., net income and ROE-5), the most widely used financial measures

Table 2
Variables Used to Measure Financial Performance

Variables	*Number of Occurrences*	
	Subtotal	*Total*
Profitability		
Return on equity (return to investors)		
Mean, median	11	
Risk adjusted	1	
(Net income + depreciation)/owner's equity	1	13
Return on sales		
Net income/unit sales	6	
Operating profit/unit sales	3	9
Net income (earnings)		5
Return on investment		3
Earnings per share		2
Profit margin (net income/sales)		1
Sales/employee		1
Equity		1
Asset utilization		
Return on assets (net income/unit assets)	8	
Before taxes and interest expense	2	
Operating income/assets	2	
Risk adjusted	1	
(Net income + depreciation)/total assets	1	14
Asset age (net fixed assets/gross fixed assets)—		
1- or 5-year average		3
Asset turnover (sales/total assets)		1
Growth		
Size		
(Total assets or logarithm[total assets])—		
1-year, 3-year, or 6-year average	16	
% change sales-1 year	12	
% change or average number of employees-1, 5 years	7	
Ranking given by *Fortune*	1	
logarithm(average sales)—4 years	1	37
Return on assets—2, 3, 4, or 5 years average		6
Return on equity—5-year average		4
Return on sales—3- or 5-year average		2
Return on assets—5-year average		2
Return on assets—5-year average, risk adjusted		1
Asset turnover (sales/total assets)—5-year average		1
Return on investment—5-year average		1
Earnings per share growth—10-year average		1
Liquidity		
Acid test (cash + receivables/liabilities)		2
Change in cash flow—1-year		1

(continued)

Table 2 Continued

Variables	*Number of Occurrences*	
	Subtotal	*Total*
Current ratio (current assets/current liabilities)		1
Current assets/total assets		1
Cash flow/interest expense		1
Pay-out ratio		1
Risk/market measures		
Excess market valuation/abnormal returns—means and *SD*s		23
Beta		13
Alpha		8
Net losses (capital market losses—direct cost losses)		1
Share price	3	
(Change in price + cash dividends)/initial price	3	
Six days-mean	1	7
Price/earnings ratio—1-year, 3-year, or 6-year average		5
Returns to portfolios		1
Market share		1
Dividends/share		1
% change dividends		1
Other		
Ownership		
% local ownership		1
% institutional ownership		1
Perceptual measures		
self-reported long-term profitability		1
Advertising level		
% change in advertising		1
advertising expenditure/revenue		1
Executive/employee compensation		
cash and bonus		1
cash and bonus and long-term compensation		1
% change in benefits		1
% change in pensions		1
% change in officer compensation		1
Diversification		1
Acquisition expenditures/revenues		1
R&D expenditures/sales		1
Leverage		
Long-term debt/equity		1
Long-term debt/net income		1
Long-term debt/assets		1
Long-term debt-%change		1
Total liability/net worth		1
Capital expenditures/long-term debt		1
Assets/equity		1
Operating leverage		1
Others		11
Grand total		208

are size (via logarithm of total assets), return on assets, return on equity, asset age, and 5-year return on sales. Thus these five measures will be used in this study.

The third issue identified in this literature review is the need for multiple sources of corporate social performance measures (Carroll, 1994; Freedman and Jaggi, 1982; Holmes, 1977; Kedia and Kuntz, 1981; Waddock and Graves, 1994). In order to overcome the deficiencies in any one source of assessing corporate social performance, this study uses multiple sources of data in order to triangulate (Jick, 1979) toward assessing corporate social performance. The four data sources used are (a) a purely perceptual measure, the *Fortune* reputation survey; (b) a hybrid measure of perceptual and multiple dimensions of CSP, the Kinder, Lydenberg, Domini (KLD) Index; (c) a purely numerical self-reported measure, the Toxics Release Inventory (TRI); and (d) corporate philanthropy. The first two measures involve perceptions of corporate performance by different external audiences. These audiences can be biased in that they can make decisions based on erroneous information or on their impressions of what the firm has done (and not what the firm has *actually* done). The latter two measures are quantitative, measurable actions by the firms. They are not based on perceptions but on hard data. By utilizing all four types of data, the limitations of any one data source are mitigated by the use of alternative measures of social performance. Each of these corporate social performance sources are discussed in detail below.

The *Fortune* survey, despite its perceptual limitations and ambiguity (Carroll, 1991; Wokutch and McKinney, 1991; Wokutch and Spencer, 1987), has been used by numerous researchers (see McGuire, Sundgren, and Schneeweis, 1988; Spencer and Taylor, 1987; Wokutch and Spencer, 1987). In *Fortune*'s survey, "senior executives, outside directors, and financial analysts rate the ten largest companies in their own industry on eight attributes of reputation, using a scale of zero (poor) to ten (excellent)" (*Fortune*, 1994: 58). Results are summed to create an overall corporate reputation index. In most CSP/CFP studies, the overall corporate reputation or the individual attribute "responsibility to the community and environment" was used as the perceptual measure of social performance. The high correlation between the overall reputation index and the individual attribute suggests that the overall perception of the firm and its image (rather than the actual actions taken by the firm) may be the dominating factor in determining the firm's relative ranking of its social performance via the *Fortune* survey (Fryxell and Wang, 1994).

The second data source, the KLD index, was developed by Kinder, Lydenberg, Domini & Co., Inc. This financial analysis firm created the

index by assessing each company on eight dimensions of corporate social performance "by referring to a consistent, largely objective, set of screening criteria" (Graves and Waddock, 1994: 1038). The eight dimensions include community relations; employee relations; environment; product; treatment of women and minorities; military contracts; nuclear power; and South Africa involvement. The first five dimensions are assessed on a 4-point scale from *major strength* to *major weakness* (see Sharfman, 1993 for a more detailed discussion of the relationship between KLD measures and other measures of CSP). The last three dimensions, if present in the focal organization, are assessed by a dichotomous scale: minor weakness or major weakness. By rating firms on multiple dimensions of social performance by using largely objective screening criteria, this index offers an improvement over the largely perceptual data of the *Fortune* survey (Mock and Hoy, 1995). Another advantage of this index is the third party, independent ranking for *all* of the Standard & Poor's 500 firms. One limitation of this index is the lack of a weighting scheme for the different dimensions of corporate social performance in that all dimensions are treated as equally important (Waddock and Graves, 1994). A second limitation of the KLD is the potential for a company's product, for example, to be rated as both a major strength *and* a major weakness. This dual rating effectively nullifies any adverse effects or potential benefits of a company's product line, so long as the company is diversified enough to have a broad product line. Further, collapsing the KLD's multiple dimensions into a unidimensional index may mask the individual dimensions that are especially important and relevant for a specific company or industry.

The third data source, the Toxics Release Inventory (TRI), has been used primarily by the government and special interest groups for the purpose of tabulating relative amounts of discharges into the environment (U.S. Environmental Protection Agency, 1995; Jones, 1990). It consists of self-reported information on environmental discharges to the water, air, and landfills, and disposal of hazardous waste. The TRI was federally mandated by the Emergency Planning and Community Right-to-Know Act (EPCRA) Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986. All manufacturing facilities in SIC codes 20-39 must report their discharges if they have "10 or more full-time employees and meet the established thresholds for manufacturing, process, or [are] otherwise using listed chemicals" (U.S. Environmental Protection Agency [EPA], 1994:14). Thresholds for manufacturing and processing are currently "25,000 pounds for each listed chemical, while the threshold for otherwise use is 10,000 pounds per chemical" (U.S. EPA, 1994:14).

Griffin (1996) and Logsdon (1995) have carefully reviewed the limitations in this database, and it will not be repeated here. Logsdon does suggest, however, that researchers using the TRI database "focus on one or only a few industries, or at least report results by industries" (p. 650).

The final measure of corporate social performance is the measurement of corporate philanthropy. To obtain data for this variable we utilized the material in the *Corporate 500 Directory of Corporate Philanthropy* (1991-1992, 1992-1993, 1993-1994). This study looks at large firm's corporate philanthropic activities and compares all firms against one another. In addition, this report assesses the difficulty of obtaining money from the firm and it provides a listing of the types of activities the firm supports along with a map showing the geographic area that the firm concentrates on in its giving activities. Finally, the authors of this report determine a "generosity index" for all of the corporations in the report and this will be discussed later.

In this article, juxtaposing all four measures of corporate social performance from the perceptual data (*Fortune* reputation survey) to the "harder" numerical reports (TRI) and corporate philanthropy and the combination of both perceptual and numerical information (KLD) allows us to triangulate toward a representative measure of a firm's corporate social performance while mitigating the limitations and impacts of any single one of the measures.

METHODOLOGY

Our sample is composed of firms within the same industry, the chemical industry, that face similar regulatory constraints, enforcement procedures, stakeholder activism, issues, and problems. The multiple data sources of CSP constrains our sample to those chemical firms that have reported their discharges to the TRI, are included in the KLD index and *Corporate 500 Directory*, and are large enough to be evaluated by the *Fortune* survey. The firms selected as a consequence of these conditions are Dow Chemical, DuPont, Monsanto, Occidental Petroleum, PPG, Union Carbide, and W. R. Grace. Note that these are large, national companies that are highly visible and active in their industry. One year, 1992, was chosen due to limitations in data compatibility and accessibility for all of the social and financial data sources. However, over time, multiple years of data can be used and an industry's and individual firm performance over time can be measured. Then such performance could be compared over time and across industries to further isolate and identify key variables in corporate social and financial performance.

Corporate Financial Performance Measures

As discussed earlier, multiple dimensions of corporate financial performance will be employed. The five financial measures used are return on equity, return on assets, total assets (adjusted for size by taking the natural logarithm), asset age, and 5-year return on sales. Because our sample is derived from a capital-intensive industry—chemicals—the focus on assets, profitability, and growth is justified in this case. As a control, each of the company's fiscal year ends on December 31 to ensure comparability across the firms (Anderson and Frankle, 1980). All 1992 financial data was collected from 1994 Compact Disclosure and the company's 1992 annual reports as necessary. Each of these measures are discussed in more detail below.

The first financial variable, return on equity, reflects the profitability of the firm by measuring the investors' return. This variable is measured by the mean net income/owners' equity. The second financial variable, return on assets, reflects the asset utilization of the firm in this capital intensive industry. Although there is a potential for confounding or double counting in that ROA is related to the first measure, ROE, by financial leverage (total assets/total equity), when ROA is dropped as a financial measure, no significant difference is observed in the financial rankings of the companies. This variable is measured by net income/assets. The third financial variable, the natural logarithm of total assets, is a proxy for size. This measure is not expected to change significantly from year to year. The fourth financial variable, asset age, measures the average age of all the fixed assets of an organization. This variable indicates the amount and regularity of capital investments in this capital-intensive industry. Because W. R. Grace does not report the appropriate numbers to calculate asset age, this variable is not used to determine W. R. Grace's overall financial performance. This variable is measured by net fixed assets/gross fixed assets. The fifth financial variable, 5-year net profit margin or return on sales-5 years (ROS-5), reflects the average profit margin attained by the portfolio of products offered by each firm. There is a slight potential for confounding or double counting in that ROA is related to ROS by a constant (asset turnover or sales/total assets) because we are analyzing firms within the same industry. However, in this study we are using ROS-5 rather than ROS for one year. When ROS-5 is dropped as a financial measure, no significant difference is observed in the financial rankings of the companies. This variable is measured by the net income/unit sales over a 5-year period, 1987-1992.

Corporate Social Performance Measures

As discussed earlier, four sources of corporate social performance are used to triangulate toward an overall corporate social performance rating. Each of the data sources, the *Fortune* reputation survey, the TRI index, the KLD index, and corporate philanthropy, is operationalized and discussed in greater detail in this section.

The first data source, the 1992 *Fortune* survey, was administered in October 1992 and published February 8, 1993. The published reputation scores (raw scores) were used for all companies regardless of the industry placing of the individual firm. For example, in 1992 Occidental Petroleum was evaluated in the mining and crude-oil production industry, PPG was evaluated in the building materials industry, whereas all other firms were evaluated in the chemical and allied products industry. Using the raw scores did not significantly change the relative position of either Occidental Petroleum or PPG within this sample of seven firms. In addition, the industry averages for chemical and allied products, mining, and building material industries were similar, which lends further support to comparing raw scores across *Fortune*'s industries. Brown and Perry (1994, 1995) have done some very interesting work with the *Fortune* data. They have shared this research with all (1995), and the thrust of their work is to remove the "halo" effects of financial performance from the *Fortune* ratings. Unfortunately they have only performed the analysis through 1991, and the data for 1992 is not available.[1]

The second corporate social performance data source, the KLD index, is published at various times throughout the year for each industry group. The firms within the chemical industry were evaluated in early 1993 regarding their 1992 activities. This variable is measured by summing up all ratings from major strengths (+2) to major weaknesses (–2) to create an overall performance score. Of all the firms in this sample, the best score was a 0 (equally weighted major strengths and major weaknesses) for DuPont. The worst score was a –8 for Union Carbide.

The third source of corporate social performance, the 1992 TRI, was published in April 1994 from data collected from firms in July 1993. This reflects the actual improvement (or degradation) in performance of each company in its treatment of toxic wastes. Our assumption here is that improvement in the treatment of toxic wastes is evidence of corporate social performance with regards to environmental issues. In order to reach a relative score for each company, percentage change in waste produced was assessed by calculating the differences in total transfers and total releases to the environment between 1992 and 1991 (U.S. EPA 1993,

1994). Total transfers and total releases to the environment are explained in more detail below.

Total transfers includes both the on-site and off-site transfers made by the company. The on-site transfers include recycling, energy recovery, and waste treatment facilities. Off-site transfers include transfers of waste to POTWs (Publicly Owned Treatment Works), waste disposals, and other (i.e., inter-company) off-site transfers. Inter-company transfers between and among the seven firms of this study are negligible.[2] However, the intracompany transfers are potentially large and may significantly increase the total amount of waste generated by some companies through double counting in the database. Thus the percentage change of waste produced between 1991 and 1992 for these seven companies has been corrected to reflect any inter- and intracompany transfers.

The total releases to the environment includes the fugitive air emissions, stack emissions, surface water discharges, underground injections, and releases to the land. No correction for the toxicity of releases was used in this study. Although Brown and Fryxell (1995) have performed the first analysis that we are aware of that attempts to assign weights to specific toxic chemicals using toxicity point values, we used similar weightings for all chemicals and all types of discharges (air-borne, solid waste, hazardous waste, and water-based). There is not yet widespread agreement on how to weight toxic chemicals and what specific weighting scheme should be applied.

The final measure utilized to assess corporate social performance is corporate philanthropy. The *Corporate 500 Directory of Corporate Philanthropy* has been published for approximately 10 years and is a fairly comprehensive analysis of corporate giving programs. One of the more important aspects of this work is the recent development of a generosity index (*Corporate 500 Directory of Corporate Philanthropy*, 1993-1994: xxxiii-xxxiv). This generosity index is calculated by determining statistical standard scores (*Z* scores) for total contributions of each company and their contribution as a percentage of net earnings before taxes (%nebt).[3] Standard scores for %nebt are weighted by a factor of two—that is, more weight is given to smaller corporations who give a larger proportion of their earnings to philanthropic activities. The generosity index is equal to the weighted standard score %nebt *plus* the standard score for total contributions. Firms are then assigned a grade (A+, A–, B+, etc.) that reflects their generosity in relation to all other firms in the sample. Although the scores are determined for all 500 corporations, it is not a problem as we are concerned with the relative position of one chemical firm as compared to another chemical firm.

After determining the raw number for each financial and social measure, each firm is ranked on each of the five financial measures and on each of the four social measures using a scale of 1 (*best*) to 7 (*worst*). The average rank for each of the firms on all the measures is then tabulated. The overall averages determine the final rank of each firm in order to distinguish among high and low financial and/or social performers.

INITIAL RESULTS AND DISCUSSION

Table 3 tabulates the raw scores for each of the seven firms on the four corporate social performance measures and the five corporate financial performance measures previously discussed. For example, the first row indicates that Dow Chemical had a median *Fortune* rating of 7.3, which is second best among the firms in this sample. Similarly, Dow's KLD index score was a –2, which ranks third in this sample. Dow's performance in reducing toxic emissions ranked sixth in the industry, and in corporate philanthropy Dow ranked second best. Dow's average of all four measures of corporate social performance is rounded to 3.3 (the sum of its placement in all four measures which total 13, divided by 4), which places it second best in terms of relative social performance in this industry in 1992. Using a similar assessment scheme for the five accounting measures, Dow has the second best financial performance. Thus Dow is a high financial and social performer in 1992 in the chemical industry. After similarly evaluating each of the firms, a corporate financial and social performance matrix for 1992 is shown in Table 4.

Initial results indicate that within this industry, companies exhibit a wide range of both corporate social performance and corporate financial performance, and that aligns with what we would expect to find in any industry. Each of the six possible cells in the CSP/CFP matrix in Table 4 is occupied by at least one of the seven competitors in the industry. As might be expected, Union Carbide, with its problems in Bhopal, India in the 1980s is a low CSP/low CFP performer. But we cannot draw any conclusions as to the direct relationship between CSP/CFP for Union Carbide, other than to note that in 1992 they were a low performer in the industry on both dimensions. Did their abysmal performance in India contribute to financial woes and further reduction in social performance, or was Bhopal a reflection of their continuing lack of attention to social issues and concerns? Both Dow and DuPont, who are regarded in some circles as exemplars of corporations that save money by adopting socially conscious programs (e.g., Dow's Waste Reduction Always Pays program), are among the leaders in corporate social performance. This is despite the

Table 3
1992 Corporate Social Performance and Corporate Financial Performance

	Corporate Social Performance						*Corporate Financial Performance*						
Company 1992	*Fortune Median (rank)*	*KLD Score (rank)*	*TRI[a] % Change (rank)*	*Corporate Philanthropy (rank)*	*Total Average Rank (rank)*	*Hi/Lo Performers*	*ROS5 % (rank)*	*ROE % (rank)*	*ln(TA) # (rank)*	*ROA % (rank)*	*Asset Age Years (rank)*	*Total average rank (rank)*	*Hi/Lo Performers*
Dow Chemical	7.3	–2.0	17.7	A–	3.3	Hi	7.6	–5.3	24.0	–0.1	2.4	2.8	Hi
	(2)	(3)	(6)	(2)	(2)		(1)	(3)	(2)	(3)	(5)	(2)	
DuPont	7.5	0.0	–3.3	A	1.8	Hi	2.5	–23.9	24.4	–9.7	2.2	4.6	Low
	(1)	(1)	(4)	(1)	(1)		(5)	(7)	(1)	(7)	(3)	(5)	
Monsanto	6.5	–4.0	–6.2	A–	3.3	Hi	4.6	–2.4	22.9	0.3	2.5	3.4	Hi
	(4)	(4)	(3)	(2)	(2)		(3)	(2)	(4)	(2)	(6)	(3)	
Occidental Petroleum	6.0	–4.0	–16.9	C	4.5	Low	–1.5	–13.8	23.6	–1.1	1.5	4.0	Hi
	(5)	(4)	(2)	(7)	(6)		(7)	(5)	(3)	(4)	(1)	(4)	
PPG	7.0	–1.0	0.1	B–	3.5	Mid	6.9	12.0	22.5	6.8	2.1	2.2	Hi
	(3)	(2)	(5)	(4)	(4)		(2)	(1)	(5)	(1)	(2)	(1)	
Union Carbide	5.1	–9.0	21.2	C+	6.8	Low	3.0	–8.5	22.3	–1.2	2.3	4.8	Low
	(7)	(7)	(7)	(6)	(7)		(4)	(4)	(7)	(5)	(4)	(6)	
W. R. Grace	5.5	–4.0	–41.3	B–	3.8	Mid	1.9	–14.6	22.5	–3.7	NA	6.0	Low
	(6)	(4)	(1)	(4)	(5)		(6)	(6)	(6)	(6)		(7)	

a. TRI has been corrected for inter- and intracompany transfers.

Table 4
1992 Corporate Financial and Social Performance Matrix

Corporate Social Performance	Corporate Financial Performance: HI	Corporate Financial Performance: LOW
HI	Dow Chemical Monsanto	DuPont
MID	PPG	W. R. Grace
LOW	Occidental Petroleum	Union Carbide

fact that relatively speaking, DuPont's financial performance in the industry is low. Apparently DuPont sees value in its socially responsible actions that warrant the continued investment despite poor financial performance. The interesting questions here for further research is why do DuPont and Grace continue high to moderate investments in socially responsible behavior with low financial performance? and why does PPG continue to reap high financial performance dividends, yet invest relatively modestly in corporate social performance when compared to others in the industry?

After examining Table 3 more closely, the perceptual CSP measures (*Fortune* reputation survey and to a lesser extent, the largely objective KLD index) are somewhat related to the financial information. The relative ranking of these two CSP measures is similar to the overall CFP rank for each company. This suggests that the a priori use of the KLD index or the *Fortune* survey correlates to a positive relationship with the accounting measures used in this study. Only the self-reported data supplied to the EPA via the TRI, and the corporate philanthropy activities, differentiates between the best and worst social performers. If the TRI data is assumed to reflect the actual performance of each company, it does not relate to either the perceived social performance or the financial performance of each company. This lack of "fit" between actual and perceived actions is similar to the earlier findings of the lack of significant correlation between the Council for Economic Priorities (CEP) independent rankings of environmental performance (actual actions) and the social performance disclosures in the company's annual reports (perceived ac-

tions) (Coffey and Fryxell, 1991; Davidson and Worrell, 1990; Ingram and Frazier, 1980).

Three potential explanations emerge from these initial results. First, the more stringent reporting requirements initiated in 1992 for the TRI releases may have inflated some of the company's releases and negatively impacted its overall social performance rating. Second, in that the TRI redefined the meaning of toxic chemicals and the minimum thresholds by adding 34 chemicals to the listed chemical, the 1992 releases may be overinflated. Third, the relationship between the marginal cost of cleanup and the marginal benefits of compliance may have shifted. All of the easy compliance actions ("low-hanging fruit") have been implemented and now the more difficult, complex, and expensive compliance actions remain. Thus the early adopters of compliance measures may be facing more difficult and expensive compliance tasks while the late followers are still reaping the benefits and significant emission decreases by picking the low-hanging fruit. To test these three potential explanations, CSP and CFP data from 1990 was assembled and compared with the relative rankings of the 1992 data. In this way we can look at the performance of the players in the industry over time and assess if either their financial performance, their social performance, or both have changed in any meaningful ways.

1990 Corporate Social Performance and Corporate Financial Performance Matrix

Using 1990 data, the CSP measures were limited to only the *Fortune* reputation survey, the TRI database, and the corporate philanthropy activities, because the KLD ratings are not available for 1990. Because Occidental Petroleum was not included in the 1990 *Fortune* reputation survey, it was eliminated from the 1990 sample. Thus six firms from the original sample were evaluated on three social performance dimensions and five financial performance dimensions. As mentioned earlier, the TRI data prior to 1992 cannot be used to directly compare with the data collected after that time (Logsdon, 1995). However, in this article, because trends and relative rankings are more important than the raw scores, these changes in TRI reporting requirements are minimized.

Table 5 shows the 1990 corporate financial and social performance matrix. The 1990 matrix also shows a wide range of performance in both social and financial activities by the six firms with a clear distinction between low and high social performers. Again, the *Fortune* scores correlate to the financial performance rankings while the TRI does not correlate to either the *Fortune* or the financial performance rankings.

Table 5
1990 Corporate Financial and Social Performance Matrix

Corporate Social Performance	Corporate Financial Performance: HI	Corporate Financial Performance: LOW
HI	Dow Chemical DuPont Monsanto	
LOW	PPG	Union Carbide W. R. Grace

When comparing the 1992 and 1990 TRI percentage change in waste generation, while the relative rankings for TRI emissions remain the same, the rate of change is decreasing or has turned positive. This suggests that some firms are generating more waste in 1992 than in prior years as reported by TRI. In addition, whereas the decreasing rate of change indicates that the low-hanging fruit may have been picked by 1992, the lack of change in the relative rankings of the companies suggests that further research is necessary to determine if there are alternative reasons for the lack of correlations between the TRI index, and the multiple dimensions of CSP and CFP.

More interestingly, the relative positioning of the firms in the industry has remained unchanged during the period 1990 to 1992. Dow, DuPont, and Monsanto remain in the high corporate social performance category, despite minor variations in financial performance. PPG, Union Carbide, and W. R. Grace remain in the lower half of corporate social performance despite relatively consistent financial performance. This suggests to these researchers that there are some internal dynamics going on that lead an organization to be more invested in socially responsible behavior. Although we can speculate on those differences, that is a topic of a separate study.

IMPLICATIONS AND FUTURE RESEARCH

The implications of this empirical study are wide ranging, notwithstanding a sample size of six. As noted earlier, the research used multiple

sources of data to triangulate corporate social performance and multiple dimensions of corporate financial performance within the context of a *single industry*. The use of perceptual-based data and actual performance of the firms involved is, we believe, a significant advance in analysis. Over time, more actual performance measures should be added to provide a more thorough and accurate assessment of *actual* corporate social performance and not just perceptions of performance.

A major thesis of this research is that individual industries operate within distinctively different contexts and with dissimilar social and environmental concerns, and patterns of stakeholder involvement and activism. As a consequence, it may be shown that the previous studies that have been across industries may have masked specific industry effects and actual social performance in that social performance and financial performance are shown to be related within an industry over time. Further investigations should be conducted into other industry's social (e.g., TRI, KLD, and *Fortune* rankings) and financial (accounting) performance as well to allow for comparisons across industries. The focus of future research should be on one industry to increase the internal validity of the findings rather than a broad-based survey of multiple firms in various industries on a single set of CSP and CFP criterion. In that way, we may further our understanding of corporate social performance and financial performance relationships in specific industry contexts and offer more relevant insights to practitioners. In addition, we believe that such a research focus will yield rich insights into specific corporate social performance activities by individual firms. We are intrigued by the split among the six firms in corporate social performance during the period 1990 to 1992 and wonder what factors and variables explain the consistency in different performance among the six players.

Second, the use by various researchers of a wide range of multiple measures for both CSP and CFP, with little or no replication or checks for validity and reliability, suggests a need to focus on a few, key CSP and CFP research measures to increase internal validity rather than generalizability. Because the TRI index appears to differentiate between high and low social performers, further research using this database is warranted. The TRI database must be carefully analyzed for any potential double counting due to inter- and intracompany transfers. On the financial side, consistency in measurement criteria will at least allow for comparisons across industries and firms.

Third, it seems apparent that the KLD index and the *Fortune* survey are measuring similar things. The ordering of firms is shown below using the two different measures:

KLD Index	Fortune Survey
DuPont	DuPont
PPG	Dow Chemical
Dow Chemical	PPG
Monsanto	Monsanto
Occidental Petroleum	Occidental Petroleum
W. R. Grace	W. R. Grace
Union Carbide	Union Carbide

We were surprised by this, especially given the widespread criticism of the *Fortune* survey and its methodology. Apparently, the *Fortune* survey, with its smaller number of questions devoted to this topic and its bias in respondents, nonetheless, is a fairly accurate measure of corporate social performance. An alternative explanation might be that the relatively untested KLD Index is flawed or really represents perceptions of image or corporate reputation.

Fourth, a closer look at Tables 4 and 5 provides hope for those of us who believe in some positive relationship between corporate financial and social performance. In Table 5, for 1990, there are no firms in the high corporate social performance and low corporate financial performance block. However, in 1992, at least one firm has maintained a high corporate social performance profile despite declining relative financial performance (DuPont). The other piece of good news is that even in those situations of low financial performance, some firms have nonetheless maintained some level of corporate social performance activity. Further research into the why and how of this involvement in social performance activity despite disappointing financial performance would seem warranted.

In short, we are calling for research into the relationship between corporate social performance and financial performance that reflects a consistency of financial measures, that uses multiple measures of social performance, that focuses on a single industry, and that looks at the movement of actual financial and social performance over time. These reasonable limitations should lead to increased knowledge about these relationships, the effects of industry context on social performance, and increased awareness of individual firm social performance activities under varying financial performance conditions. In addition, it may allow us to refine our understanding of these complex relationships and provide useful advice to practitioners on how to improve and measure their own social performance.

NOTES

1. Personal communication with the authors.

2. The major recipient of the intercompany transfers was DuPont with approximately 164,000 pounds and 10.2 million pounds received in 1991 and 1992, respectively. This represents less than .02% of DuPont's 1991 total waste and approximately 1% of its 1992 waste.

3. The formula for determining the generosity index (GI) is shown below:

$$GI = \frac{2(P - P_m)}{\sqrt{\frac{(P - P_m)^2}{N}}} + \frac{(T - T_m)}{\sqrt{\frac{(T - T_m)^2}{N}}}$$

where P = contributions as %nebt, P_m = mean of %nebt, T = Total contributions, T_m = mean of total contributions, N = total number of companies.

REFERENCES

Abbott, W. F., and R. J. Monsen. 1979. "On the Measurement of Corporate Social Responsibility: Self-Reported Disclosures and a Method of Measuring Corporate Social Involvement." *Academy of Management Journal* 22 (3): 501-15.

Alexander, G. J., and R. A. Buchholz. 1978. "Corporate Social Responsibility and Stock Market Performance." *Academy of Management Journal* 21 (3): 479-86.

Anderson, J. C., and A. W. Frankle. 1980. "Voluntary Social Reporting: An Iso-Beta Portfolio Analysis." *The Accounting Review* 55:467-79.

Arlow, P., and M. Gannon. 1982. "Social Responsiveness, Corporate Structure, and Economic Performance." *Academy of Management Review* 7 (2): 235-41.

Aupperle, K. E., A. B. Carroll, and J. D. Hatfield. 1985. "An Empirical Examination of the Relationship Between Corporate Social Responsibility and Profitability." *Academy of Management Journal* 28 (2): 446-63.

Belkaoui, A. 1976. "The Impact of the Disclosure of the Environmental Effects of Organizational Behavior on the Market." *Financial Management* 5 (4): 26-31.

Bowman, E. H. 1978. "Strategy, Annual Reports, and Alchemy." *California Management Review* 20 (3): 64-71.

Bowman, E. H., and M. Haire. 1975. "A Strategic Posture Toward Corporate Social Responsibility." *California Management Review* 18 (2): 49-58.

Bragdon, J. H., and J. T. Marlin. 1972. "Is Pollution Profitable?" *Risk Management* 19 (2): 9-18.

Bromiley, P., and A. Marcus. 1989. "The Deterrent to Dubious Corporate Behavior: Profitability, Probability, and Safety Recalls." *Strategic Management Journal* 10: 233-50.

Brown, B., and S. Perry. 1994. "Removing the Financial Performance Halo for *Fortune's* 'Most Admired Companies.' " *Academy of Management Journal* 37 (4): 1346-59.

———. 1995. "Halo-Removed Residuals of *Fortune's* 'responsibility to the Community and Environment'—A Decade of Data." *Business and Society* 34 (2): 199-215.

Brown, R. L., and G. E. Fryxell. 1995. *Changes in Toxic Air Releases and Financial Correlates: An Empirical Study of Environmental Strategies in the Petroleum Industry.* Paper presented at the annual meetings of the Academy of Management, Vancouver, BC, Canada, August.

Carroll, A. B. 1979. "A Three-Dimensional Model of Corporate Performance." *Academy of Management Review* 4 (4): 497-505.

———. 1991. "Corporate Social Performance Measurement: A Commentary on Methods for Evaluating an Elusive Construct." Pp. 385-401 in J. E. Post (ed.), *Research in Corporate Social Performance and Policy*, vol. 12. Greenwich, CT: JAI.

———. 1994. "Social Issues in Management Research: Experts' Views, Analysis, and Commentary." *Business and Society* 33 (3): 497-505.

Chen, K. H., and R. W. Metcalf. 1980. "The Relationship Between Pollution Control Record and Financial Indicators Revisited." *The Accounting Review* 55 (1): 168-77.

Cochran, P. L., and R. A. Wood. 1984. "Corporate Social Responsibility and Financial Performance." *Academy of Management Journal* 27 (1): 42-56.

Coffey, B. S., and G. E. Fryxell. 1991. "Institutional Ownership of Stock and Dimensions of Corporate Social Performance: An Empirical Examination." *Journal of Business Ethics* 10:437-44.

Corporate 500: Directory of Corporate Philanthropy (10th ed.). 1991-1992. San Francisco, CA: Public Management Institute.

——— (11th ed.). 1992-1993. San Francisco, CA: Public Management Institute.

——— (12th ed.). 1993-1994. San Francisco, CA: Public Management Institute.

Cowen, S. S., L. B. Ferreri, and D. B. Parker. 1987. "The Impact of Corporate Characteristics on Social Responsibility Disclosure: A Typology and Frequency-Based Analysis." *Accounting Organizations and Society* 12 (2): 111-22.

Davidson, W. N., P. R. Chandy, and M. Cross. 1987. "Large Losses, Risk Management and Stock Returns in the Airline Industry." *Journal of Risk and Insurance* 55: 162-72.

Davidson, W. N., and D. L. Worrell. 1988. "The Impact of Announcements of Corporate Illegalities on Shareholder Returns." *Academy of Management Journal* 31 (1): 195-200.

———. 1990. "A Comparison and Test of the Use of Accounting and Stock Market Data in Relating Corporate Social Responsibility and Financial Performance." *Akron Business and Economic Review* 21 (3): 7-19.

Eckbo, B. E. 1983. "Horizontal Mergers, Collusion, and Stockholder Wealth." *Journal of Financial Economics* 11: 241-73.

Fogler, H. R., and F. Nutt. 1975. "A Note on Social Responsibility and Stock Valuation." *Academy of Management Journal* 18 (1): 155-66.

Fortune. 1994, February. "America's Most Admired Corporations," p. 58.

Freedman, M., and B. Jaggi. 1982. "Pollution Disclosures, Pollution Performance and Economic Performance." *Omega* 10 (2): 167-76.

———. 1986. "An Analysis of the Impact of Corporate Pollution Disclosures Included in Annual Financial Statements on Investors' Decisions." Pp. 193-212 in M. Neimark (ed.), *Advances in Public Interest Accounting.* Greenwich, CT: JAI.

Friedman, M. 1970. (reprint from 1962). "The Social Responsibility of Business Is to Increase its Profits." *New York Times Magazine*, September 13, pp. 122-6.

Frooman, J. S. 1994. "Does the Market Penalize Firms for Socially Irresponsible Behavior?" Pp. 329-34 in D. Collins (ed.), *Proceedings from the Fourth Annual International Association for Business and Society.*

Fry, F. L., and R. J. Hock. 1976. "Who Claims Corporate Responsibility? The Biggest and the Worst." *Business and Society Review* 18:62-5.

Fry, F. L., G. D. Keim, and R. E. Meiners. 1982. "Corporate Contributions: Altruistic or for Profit?" *Academy of Management Journal* 25 (1): 94-106.

Fryxell, G. E., and J. Wang. 1994. "The *Fortune* Corporate 'Reputation' Index: Reputation for What?" *Journal of Management* 20 (1): 1-14.

Graves, S. B., and S. A. Waddock. 1994. "Institutional Owners and Corporate Social Performance." *Academy of Management Journal* 37 (4): 1034-46.

Griffin, J. J. 1996. "The Toxics Release Inventory: Limitations and Implications." Pp. 324-9 in K. Rehbein (ed.), *Proceedings from the Sixth International Association for Business and Society.*

Hart, S. L., and G. Ahuja. 1994. *Does it Pay to Be Green?* Paper presented at the national meetings of the Academy of Management, Dallas, TX, August.

Heinze, D. C. 1976. "Financial Correlates of a Social Involvement Measure." *Akron Business and Economic Review* 7 (1): 48-51.

Hill, C. W., P. C. Kelley, and B. R. Agle. 1990. "An Empirical Examination of the Determinants of OSHA Violations." Pp. 402-12 in D. Wood and W. E. Martello (eds.), *Proceedings from the 1990 International Association for Business and Society.*

Hoffer, G. E., S. W. Pruitt, and R. J. Reilly. 1988. "The Impact of Product Recalls on the Wealth of Sellers: A Reexamination." *Journal of Political Economy* 96 (3): 663-70.

Holman, W. R., J. R. New, and D. Singer. 1990. "The Impact of Corporate Social Responsiveness on Shareholder Wealth." Pp. 265-79 in L. E. Preston (ed.), *Corporation and Society Research: Studies in Theory and Measurement.* Greenwich, CT: JAI.

Holmes, S. L. 1977. "Corporate Social Performance: Past and Present Areas of Commitment." *Academy of Management Journal* 20 (3): 433-8.

Ingram, R. W. 1978. "An Investigation of the Information Content of (Certain) Social Responsibility Disclosures." *Journal of Accounting Research* 16 (2): 270-85.

Ingram, R. W., and K. B. Frazier. 1980. "Environmental Performance and Corporate Disclosure." *Journal of Accounting Research* 18 (2): 614-21.

———. 1983. "Narrative Disclosures in Annual Reports." *Journal of Business Research* 11:49-60.

Jarrell, G., and S. Peltzman. 1985. "The Impact of Product Recalls on the Wealth of Sellers." *Journal of Political Economy* 93 (3): 512-36.

Jick, T. 1979. "Mixing Qualitative and Quantitative Methods: Triangulation in Action." *Administrative Science Quarterly* 24:602-11.

Johnson, R. A., and D. W. Greening. 1994. "Relationships Between Corporate Social Performance, Financial Performance, and Firm Governance." Pp. 314-8 *1994 Best Paper Proceedings of the Academy of Management.*

Jones, J. 1990. "Verification of Toxic Release Inventory Data Using Other Environmental Reports." *Utah Department of Health, Division of Environmental Health,* August 10.

Kedia, B., and E. C. Kuntz. 1981. "The Context of Social Performance: An Empirical Study of Texas Banks." Pp. 133-54 in L. E. Preston (ed.), *Research in Corporate Social Performance and Policy,* vol. 3. Greenwich, CT: JAI.

Kohls, J. 1985. "Corporate Board Structure, Social Reporting, and Social Performance." Pp. 165-89 in L. E. Preston (ed.), *Research in Corporate Social Performance and Policy*, vol. 7. Greenwich, CT: JAI.

Lerner, L. D., and G. E. Fryxell. 1988. "An Empirical Study of the Predictors of Corporate Social Performance: A Multi-Dimensional Analysis." *Journal of Business Ethics* 7:951-9.

Logsdon, J. M. 1995. "The Toxics Release Inventory as a Data Source for Business and Society Studies." Pp. 648-53 in D. Collins (ed.), *Proceedings from the International Association for Business and Society.*

Marcus, A. A., and R. S. Goodman. 1986. "Compliance and Performance: Toward a Contingency Theory." Pp. 193-221 in L. E. Preston and J. E. Post (eds.), *Research in Corporate Social Performance and Policy*, vol. 8. Greenwich, CT: JAI.

McGuire, J. B., A. Sundgren, and T. Schneeweis. 1988. "Corporate Social Responsibility and Firm Financial Performance." *Academy of Management Journal* 31 (4): 854-72.

Mock, V. E., and F. Hoy. 1995. "Corporate Social Performance: A Comparison of the KLD, Aupperle, *Fortune*, and Self-Reported Measures." Pp. 659-64 in D. Collins (ed.), *Proceedings from the International Association for Business and Society.*

Morris, S. A., K. A. Rehbein, J. C. Hosseini, and R. L. Armacost. 1990. "Building a Profile of Socially Responsive Firms." Pp. 297-303 in D. J. Wood and W. E. Martello (eds.), *Proceedings of the International Association for Business and Society.*

Moskowitz, M. 1972. "Choosing Socially Responsible Stocks." *Business and Society Review* 10:71-5.

———. 1975. "Profiles in Corporate Responsibility: The Ten Worst and the Ten Best." *Business and Society Review* 13:28-42.

Newgren, K. E., A. A. Rasher, M. E. LaRoe, and M. R. Szabo. 1985. "Environmental Assessment and Corporate Performance: A Longitudinal Analysis Using Market-Determined Performance Measures." Pp. 153-64 in L. E. Preston (ed.), *Research in Corporate Social Performance and Policy*, vol. 7. Greenwich, CT: JAI.

Parket, R., and H. Eilbert. 1975. "Social Responsibility: The Underlying Factors." *Business Horizons* 18 (4): 5-11.

Profit Whatever the Cost? The Debate Intensifies on Making Money against Making Employees Happy. *Boston Globe*, April 21, 1996, p. A1.

Pruitt, S. W., and D. R. Peterson. 1986. "Security Price Reactions Around Product Recall Announcements." *The Journal of Financial Research* 9 (2): 113-22.

Riahi-Belkaoui, A. 1992. "Executive Compensation, Organizational Effectiveness, Social Performance and Firm Performance: An Empirical Investigation." *Journal of Business Finance and Accounting* 19 (1): 25-38.

Rockness, J., P. Schlachter, and H. O. Rockness. 1986. "Hazardous Waste Disposal, Corporate Disclosure, and Financial Performance in the Chemical Industry." *Advances in Public Interest Accounting* 1:167-91.

Shane, P. B., and B. H. Spicer. 1983. "Market Response to Environmental Information Produced Outside the Firm." *The Accounting Review* 58 (3): 521-38.

Sharfman, M. 1993. "A Construct Validity Study of the KLD Social Performance Rating Data." In J. Pasquero and D. Collins (eds.), *Proceedings of the International Association for Business and Society.*

Spencer, B. A., and G. S. Taylor. 1987. "A Within and Between Analysis of the Relationship Between Corporate Social Responsibility and Financial Performance." *Akron Business and Economic Review 18 (3): 7-18.*

Spicer, B. H. 1978. "Investors, Corporate Social Performance and Information Disclosure: An Empirical Study." *The Accounting Review* 53 (1): 94-111.

Strachan, J. L., D. B. Smith, and W. L. Beedles. 1983. "The Price Reaction to (Alleged) Corporate Crime." *The Financial Review* 18 (2): 121-132.

Sturdivant, F. D., and J. L. Ginter. 1977. "Corporate Social Responsiveness: Management Attitudes and Economic Performance." *California Management Review* 19 (3): 30-9.

Ullmann, A. 1985. "Data in Search of a Theory: A Critical Examination of the Relationship Among Social Performance, Social Disclosure, & Economic Performance." *Academy of Management Review* 10:450-77.

U.S. Environmental Protection Agency. 1993. *1991 Toxics Release Inventory: Public Data Release*. Washington, DC: Author.

———. 1994. *1992 Toxics Release Inventory: Public Data Release*. Washington, DC: Author.

———. 1995. "Toxics Release Inventory (TRI) Data Use Conference: Building TRI and Pollution Prevention Partnerships." *Proceedings*. Boston, MA, December 5-8, 1994. Washington, DC: Author.

Vance, S. C. 1975. "Are Socially Responsible Corporations Good Investment Risks?" *Academy of Management Review* (August): 18-24.

Waddock, S. A., and S. B. Graves. 1994. *The Corporate Social Performance-Financial Performance Link*. Paper presented at the national meetings of the Academy of Management, Dallas, TX, August.

Waddock, S. A., and J. F. Mahon. 1991. "Corporate Social Performance Revisited: Dimensions of Efficacy, Effectiveness, and Efficiency." Pp. 231-64 in J. E. Post (ed.), *Research in Corporate Social Performance and Policy*, vol. 12. Greenwich, CT: JAI.

Wartick, S. L., and P. L. Cochran. 1985. "The Evolution of the Corporate Social Performance Model." *Academy of Management Review* 10 (4): 758-69.

Wier, P. 1983. "The Costs of Antimerger Lawsuits: Evidence From the Stock Market." *Journal of Financial Economics* 11: 207-24.

Wokutch, R. E., and E. W. McKinney. 1991. "Behavioral and Perceptual Measures of Corporate Social Performance." Pp. 309-30 in J. E. Post (ed.), *Research in Corporate Social Performance and Policy*, vol. 12. Greenwich, CT: JAI.

Wokutch, R. E., and B. A. Spencer. 1987. "Corporate Saints and Sinners. The Effects of Philanthropic and Illegal Activity on Organizational Performance." *California Management Review* 29 (2): 62-77.

Wood, D. J. 1991. "Corporate Social Performance Revisited." *Academy of Management Review* 6 (4):691-718.

Wood, D. J., and R. E. Jones. 1995. "Stakeholder Mismatching: A Theoretical Problem in Empirical Research on Corporate Social Performance." *International Journal of Organizational Analysis* 3:229-67.