Is Doing Good Good for You?
Yes, Charitable Contributions Enhance Revenue Growth

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Abstract

A key question concerning socially responsible corporate activities is whether such actions achieve traditional goals, such as profit maximization and shareholder value creation, or whether such activities represent a drain on resources by opportunistic managers. Much of the debate about the legitimacy of and justification for socially responsible activities would be settled if it is convincingly shown that they further traditional business goals. In this study we provide such evidence. Using a large sample of charitable contributions made by public companies from 1989 through 2000, and a statistical methodology that distinguishes causation from association, we document that charitable contributions enhance the future revenue growth of the donors. In particular, we find evidence that, for firms in industries that are highly sensitive to consumer perception, corporate giving is associated with subsequent sales growth. On the other hand, our results do not provide strong evidence that revenue growth drives future charitable giving.

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I. Introduction

Corporations in the United States contributed close to $14 billion to charity in 2005, almost double the amount contributed just a decade earlier (Giving USA, 2006). Despite this substantial growth, corporate giving remains controversial. The main question: Should business enterprises engage in socially responsible activities, such as supporting the arts, helping the poor, fighting diseases, and protecting the environment; or should business enterprises focus on maximizing profits and shareholder value, leaving the good deeds to individual shareholders and other stakeholders? The debate over corporate social responsibility ("CSR") is as old as corporate involvement in such activities (e.g., Berle, 1931 and Dodd, 1932) and is far from resolution or convergence of opinions, as evidenced by the ever-growing number of newspaper articles, scientific papers, and conferences on CSR.

Surely, questions concerning the legitimacy of CSR are moot if such activity furthers the traditional objectives of business enterprises: profit maximization and the creation of shareholder value (Levitt, 1958; Friedman, 1970). In fact, proponents of CSR argue that most social initiatives do make economic sense by, for example, increasing customer loyalty and brand awareness, improving employee retention and productivity, or reducing litigation risk. However, critics believe that corporate social initiatives are a drain on shareholder wealth and a distraction of managers' attention in endeavors where they have no particular expertise. Thus, if it is convincingly shown, for example, that corporate charitable contributions increase revenue (by more than the contributions, of course), then such evidence placates the critics' concerns about corporate philanthropy. In such cases, corporate contributions are as justified as research and development (R&D), capital expenditures, or marketing campaigns.

Indeed, much research on CSR strives to establish empirically a business case for socially responsible activities. Margolis and Walsh (2001) report that since 1972 there have been 95 studies investigating the link between social performance and financial performance. These studies use a wide variety of measures of CSR, including environmental disclosures and practices (e.g., Blacconiere and Patten 1994; Russo and Fouts, 1997; Dowell, Hart and Yeung, 2000), *Fortune* magazine's corporate reputation survey (e.g., Herremans, Akathaporn and McInnes, 1993), divestment from South Africa (e.g., Patten, 1990; Teoh, Welch and Wazaan, 1999), and Kinder, Lydenberg and Domini ("KLD") ratings of social performance (e.g., Waddock and Graves, 1997a). Results from this research generally indicate a positive association between CSR and economic performance (Roman, Hayibor and Agle, 1999; Margolis and Walsh, 2001; Orlitzky, Schmidt and Rynes, 2003).

While clearly worthwhile and advancing the debate on CSR, most of the extant empirical work establishes an association between such activities and business goals. But what about causation? Perhaps the causation runs the other way—from economic performance to social performance. There are three possible explanations for the documented positive association between social performance and economic performance. First, financially successful enterprises have greater means or economic slack (i.e., cash, highly priced stock) than less successful businesses have to engage in socially responsible activities. Second, there is a genuine business case for socially responsible actions and CSR does indeed contribute to improved financial performance. Finally, neither drives the other, but the quality of management—a correlated variable—affects both social and economic performance (Waddock and Graves, 1997a). Most CSR studies, while recognizing the causality issue, fail to resolve it. The reason is simple: Establishing causality by statistical means is notoriously difficult, challenging researchers not

only in CSR but in other fields as well (e.g., the difficulties encountered in disentangling the effect of corporate investment (e.g., R&D) on sales or profitability).

In this study, we quantify the effect of corporate charitable contributions on the all important "top line"—annual revenues. We do this by using a large sample of charitable contributions made by U.S. public companies from 1989 through 2000 and employing a widely used methodology—Granger causality—for investigating cause and effect.[1] The methodology is simple, yet powerful. If A causes B in a systematic manner, then A will be associated with future values of B, whereas B will not be associated with future values of A. For example, if an increase in the highway speed limit causes an increase in the rate of car accidents, then a speed limit increase in time t should be significantly associated with car accident increases in periods $t + 1$, $t + 2$, and thereafter. In contrast, an observed increase in the accident rate in period t will not be associated with subsequent increases in speed limit.

In addition, we address the possibility that effective managers drive both social and financial performance. Specifically, it may be that successful managers have the ability to enhance both sales growth and charitable giving programs, satisfying several stakeholder groups simultaneously. In this case, there will be an association between charitable contributions and sales growth, but the causal factor for both is managerial quality. We, therefore, include in our analysis a powerful indicator of managerial quality, termed by economists "organization capital." This variable captures the unique contribution of a company's systems, processes, and organizational designs—that is, its managerial quality—to its performance. If managerial quality is the factor responsible for our findings, then by including it in the regression it will be statistically significant, while charitable contributions will cease to be so.

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[1] Dowell, Hart and Yeung (2000) are probably the first to use this methodology in the CSR literature. They examine the relationship between a firm's environmental standards and Tobin's q. However, they do not find any evidence that a firm's current environmental standards are a significant predictor of future firm value.

We test cross-sectionally whether annual changes in corporate contributions are associated with subsequent changes in revenues (sales growth). In addition to management quality, we control for the major contributors to revenue growth, in particular R&D, capital expenditures, and mergers and acquisitions, enabling us to focus on the incremental effect of charitable contributions on revenue growth. We also include the market-to-book ratio, a proxy for future growth expectations, to address the possibility that an association between giving and subsequent sales results from managers basing giving decisions on their forecasts of growth.

Our analysis documents that revenue growth in year t is significantly associated with the growth in charitable contributions in previous years, consistent with charitable contributions *causing* revenue increases. Notably, when we perform the dual part of the Granger causality test (Granger, 1969)—regressing the growth in charitable contributions in year t on revenue growth in previous years, $t - 1$ and $t - 2$, the coefficients on revenue growth are marginally significant at best. We, accordingly, do not find persuasive evidence that revenue growth substantially causes more corporate giving.

We further investigate the ability of corporate charitable contributions to enhance revenue by examining product market incentives to appear philanthropic. Contributions can improve brand awareness and the reputation of a company among customers as well as alleviate concerns about corporate misconduct. Firms that are more sensitive to public perception have greater incentives to appear charitable to increase demand for their products. For example, contributions by Bank of America will be more effective in changing customer attitudes than contributions by Boeing, whose sales are to governments and corporations. Thus, we predict that consumer-oriented firms will most effectively use their philanthropy programs to boost sales. To test this conjecture, we focus on sectors where the general public—the most sensitive audience to

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corporate contributions—is the customer (e.g., consumer product manufacturers, retailers, and financial services). When we perform our analysis on consumer-oriented industries, we find evidence consistent with a strong causal relationship between contributions and subsequent revenue growth, whereas for other industries the results are insignificant. For firms sensitive to consumer perception, the estimated proportion of actual sales growth explained by gifts is 0.32% on average.[2] In the second part of the Granger causality tests, for firms with high sensitivity to public perception, we find no evidence of an association between current sales and future contributions. For firms with low sensitivity to public perception, we report marginally significant results of an association between sales and subsequent charitable giving.

Summing up, the analysis we perform supports our conclusion that charitable contributions by U.S. companies enhance future revenue growth. Doing good is apparently good for you. A reassuring finding for CSR critics, which, we believe, is first documented here for charitable contributions in a comprehensive manner, and should be of considerable interest to managers, board members, investors, legislators, and the general public. There are, of course, important issues left for future research, including whether firms choose the optimal level of giving to maximize profits and whether corporate charitable contributions actually do improve social welfare. Nevertheless, we believe that our findings, as well as the statistical methodology underlying them, advance the discourse on CSR.

Section II of the paper discusses corporate philanthropy and the link between corporate philanthropy and sales. Section III describes the data and our methodology, and presents results of the tests of the effect of corporate giving on future sales. Section IV concludes the paper.

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[2] For each observation, we first compute the contribution of GIFT to sales growth as the difference between the predicted sales growth using the actual lagged growth in gifts and the predicted sales growth with zero growth in gifts. The actual value of all explanatory variables other than GIFT is used to derive the predicted sales growths. The mean contribution of GIFT to sales growth divided by the actual sales growth is the proportion of actual sales growth explained by gifts.

II. Background on Corporate Charitable Giving

A Brief History of Corporate Philanthropy

Differing presumptions about the actual motives for corporation philanthropy have led to over 100 years of debate in the United States concerning the legitimacy of corporate giving. Initially, contributions were legally permissible only if they provided a direct and immediate benefit to the firm (Filbey, 1931). For example, railroads were a major corporate donor in the late 19th century. The railroads' gifts resulted from pure self-interest, as they gave to YMCAs along the tracks that supplied their workers with an economical place to sleep (Muirhead, 1999).

In 1919, 1928, and 1934, Congress considered but did not approve a corporate tax deduction for charitable giving. Because corporations are organized under state, not federal, law, Congress did not want to encourage behavior that was not explicitly permitted in most states (Knauer, 1995). After protracted debate, Congress approved a tax deduction for corporate philanthropy during the Great Depression. The Revenue Act of 1935 allowed corporations to deduct charitable contributions up to 5% of pre-tax income. The Economic Recovery Tax Act of 1981 raised the limit to 10%, where it remains currently.

Even with beneficial federal tax treatment, corporate philanthropy remained *ultra vires*, or beyond the explicit powers accorded to management, in many states under the philosophy that managers could not give away shareholder money without shareholder approval (Knauer, 1995). Thus, corporate giving was limited until the 1953 landmark case *A.P. Smith Manufacturing Co. v. Barlow*, when the New Jersey Supreme Court allowed the company to donate $1,500 to Princeton University, giving managers power to make charitable contributions regardless of stockholders' direct interests. The court reasoned that corporate philanthropy improves the economic and social environment in which the corporation operates and, therefore, provides an

indirect or long-term benefit to the company (Knauer, 1995). The Delaware courts upheld this view of corporate philanthropy in the *Theodora Holding Co. v. Henderson* case in 1969. These cases opened the door for business support of a large variety of charitable causes and resulted in a dramatic increase in corporate philanthropy (Yankey, 1996).

Every state now has a statute allowing companies to make charitable contributions. These statutes generally do not limit the amount of the contributions or the recipients (Balotti and Hanks, 1999). Even though the practice of corporate philanthropy is prevalent today, debate over its legitimacy continues. While versions of recent corporate tax legislation (e.g., the CARE Act of 2002) included proposals enhancing tax incentives for charitable giving, presumably to encourage more corporate philanthropy, versions of other legislation (e.g., House Resolutions 944 and 945 in 1997, early versions of the Sarbanes-Oxley Act of 2002, and a Senate Finance Committee proposal in 2004) sought to place further controls over corporate philanthropy under the assumption that managers make self-aggrandizing giving decisions. While none of these proposals eventually passed, the contradictory grounds on which they were based demonstrate the need for further understanding of corporate philanthropy and its consequences.

Link Between Corporate Philanthropy and Sales

Today, a wide variety of causes and organizations benefit from corporate giving. Most firms spend the largest fraction of their contributions budget on education. Not surprising, health and humans services organizations are the major beneficiaries of contributions from pharmaceutical companies. Arts and cultural, environmental, international, and community and civic causes also receive corporate support. This support includes both cash and noncash contributions, such as inventory, land, stock, and employee time. Firms can give funds directly to a charitable cause or through corporate-sponsored foundations (Petrovits, 2006).

Corporate philanthropy can maximize shareholder value by boosting sales, raising employee morale and productivity (Navarro, 1988; Greening and Turban, 2000), stimulating innovation, or improving relations with government regulators and special interest groups (Barron, 2001; Neiheisel, 1994). Critics of corporate philanthropy have argued that corporate giving is a managerial perquisite; managers make contribution decisions to further their own objectives and community status (Balotti and Hanks, 1999), and contributions are thus just an agency cost (Jensen and Meckling, 1976). Useem and Kutner (1984), Galaskiewicz (1997), Boatsman and Gupta (1996), and Brown, Helland and Smith (2006) present evidence consistent with the CEO and board wielding substantial influence over the firms' giving decisions.[3] Interestingly, one fact is often overlooked in discussions of the motivations for corporate giving: The profit maximization motive and the managerial opportunism motive are not mutually exclusive. For example, a contribution could help a corporate manager attain a higher social status while simultaneously enhancing the firm's reputation among consumers.

In this study, we focus on the first possible reason why managers devote corporate resources to charitable causes—to enhance revenue. Contributions can increase the firm's name recognition among consumers in a similar manner to advertising (e.g., Coke's sponsorship of Olympic teams). Corporate giving can also enhance a company's long-term reputation, which increases customer retention and reduces the price elasticity of demand (e.g., Ben and Jerry's).[4] Philanthropy programs can also be established to increase demand in the short-run (e.g., cause-

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[3] A third possible motive is that corporate contributions are altruistic, providing no benefit to the firm's stockholders or its managers. Either managers may be altruistic or individual investors may be altruistic. In the case of individual investors, they could choose to give via the firm because of possible tax benefits. Corporate contributions are tax deductible while dividends are not deductible so using the firm as an intermediary could increase the overall amount of giving. Theoretically, for the altruistic motive not to unravel, virtually all investors must be altruistic. There is little empirical support for a purely altruistic motive.

[4] According to a 2000 survey conducted by Walker Information and the Council on Foundations (http://www.cof.org), among customers who rate a firm's philanthropy as high, 94.9% (87.4%) say they will continue doing business with (recommend) the company. Among customers who rate a firm's philanthropy as low, only 66.6% (56.1%) say they will continue doing business with (recommend) the company.

related marketing, such as Avon's pink ribbon products, where a portion of each sale goes to Avon's Breast Cancer Crusade), and in the long-run (e.g., publishing company McGraw Hill funds literacy programs that ultimately increase its consumer base). Finally, firms can hope to improve conditions internationally with the long-term goal of enhancing the size and quality of potential new markets.

Woods and Jones (1995) argue that researchers should expect a positive association between social performance and financial performance only when there is a theoretical link between the two measures. We use sales as our construct of economic performance because, as discussed above, there is a clear connection between contributions and revenues. In addition, Margolis and Walsh (2001) note that in studies of the relation between social and economic performance the inclusion of control variables has been ad hoc with little consideration given to other factors that affect financial performance. However, a large body of literature exists on the determinants of sales, and we include these other determinants as controls in our analysis in order to isolate the effect of charitable giving.

Prior research on corporate contributions primarily focuses on identifying the determinants of the level of giving (Clotfelter, 1985) and offers only indirect evidence of a link between revenue growth and corporate contributions. For example, several studies find a positive association between advertising and corporate giving (Schwartz, 1968; Fry, Keim and Meiners, 1982; Navarro, 1988; Boatsman and Gupta, 1996). Johnson (1966) finds that firms in industries characterized by rivalry give more than firms in industries characterized by perfect competition or monopolistic firms, because rival firms can differentiate themselves whereas competitive firms can not afford to differentiate and monopolistic firms have no marketing reason to do so. In terms of reputation, Fombrun and Shanley (1990) show that corporate giving enhances a firm's

reputation, and Williams and Barret (2000) report that, while a firm's reputation is diminished by OSHA and EPA violations, the extent of decline is reduced by charitable giving.

We use charitable contributions as our CSR construct because of the meaningful impact corporate philanthropy can have on social welfare. In addition, the prevalence of corporate giving in the United States allows us to examine a large cross-section of firms. The dollar amounts given to charity are measurable, auditable, and comparable over time. Also, compared to other CSR initiatives, such as environmental investments, it is relatively easy for a firm to turn on or off the corporate spigot in a given year, which could give contributions more variability over time and potentially more power to the researcher to identify causality. The downside of using corporate philanthropy is that it represents only one dimension of CSR, so our results might not be generalizable. However, corporate contributions are an essential element in many firms' social responsibility strategies, and, to the best of our knowledge, there is no prior research that examines the effect of philanthropy on economic performance in the 1990s. There is some anecdotal evidence (Smith, 2000; Byrnes, 2005) that, over the past decade, corporate philanthropy programs have evolved such that firms now require congruence between their business objectives and their social objectives and will not invest in corporate giving unless it adds value. Thus, a large sample study of corporate contributions over this period that confirms or disproves the anecdotal evidence is relevant to wide audiences.

III. Data, Empirical Models and Results

Sample and Descriptive Statistics

We identify firms with corporate philanthropy programs using the Taft Group's Corporate Giving Directory, which is published annually. The Taft profiles include the type of

giving (direct giving, foundation giving, or both) and some data on the amount of giving. These profiles are the primary source of direct corporate giving data. For firms identified in Taft as having a corporate foundation, we collect foundation giving data from the National Center for Charitable Statistics (NCCS) Core Trend Private Foundation Data Extract. Thus, our measure of total giving equals direct giving, when available from Taft, as well as giving from the corporate foundation. Overall, data on charitable giving, termed GIFT, is obtained for the years 1989–2000. We use estimated marginal tax rates from Graham (1996a, 1996b) and financial statement information from the COMPUSTAT annual database. We delete firms with less than seven years of charitable giving data so that we have sufficiently long time series for each firm to obtain reasonable estimates of Granger causality.[5] The final sample consists of 1,618 observations for 251 firms.

A few noteworthy points on the data are as follows: First, only firms that choose to report their direct giving to Taft are included in the sample, which could introduce sample selection bias; firms who choose to disclose direct giving might be the firms that can most effectively use charitable giving to enhance performance. This concern is mitigated by the fact that our sample is composed of a wide variety of firms and the fact that all corporate foundation giving is disclosed via the foundation's publicly available tax return. Also, to the extent that the effectiveness of charitable giving differs across the firms in the sample, our tests, even if using incomplete data, will capture the impact of charitable gifts on performance. Second, the Taft data is self-reported and thus is not based on a uniform definition. Different firms could have different definitions of charitable giving, e.g., one firm might classify an ad in a nonprofit magazine as a gift, while another classifies it as advertising. This introduces measurement errors that are not

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[5] Our estimation models require data on GIFT for three prior years. A firm is considered in the sample if four consecutive years of data are available. We require three such four consecutive years of data to be available so that we can estimate the panel data variance–covariance matrix for each firm-group.

likely to be systematic, but could lower the power of our tests. Third, some firms note that they report only charitable giving in the United States or giving at their headquarters. To the extent that giving is decentralized, our corporate charitable contribution measure is understated. This could introduce noise in the charitable giving data. We mitigate this problem by examining the growth (change) in charitable giving.

Table 1, Panel A, provides the distribution of firms and firm-year observations across broad industries as defined by Sharpe (1982). Of the 251 sample firms, approximately two-thirds belong to three industries: 96 firms are in consumer goods, 39 firms are in capital goods, and 33 are in financial institutions. Table 1, Panel B, provides the year-wise distribution of the sample. All nine years are well-represented: from a low of 132 firms in 2000 to a high of 212 firms in 1997. Overall, the sample consists of a variety of firms from different industries and across time.

Table 1, Panel C, provides descriptive statistics. The mean (median) revenue, SALE, is $8.9 ($3.6) billion, exhibiting a right skewed distribution; there are a few large firms and many that are small in terms of revenue. The mean (median) charitable giving, GIFT, is $8.93 ($1.99) million. On average, charitable giving represents about 0.1% of sales and 1.6% of net income. Values of GIFT range from a minimum of $3,000 for Thomas and Betts Corp. in 1995 to a maximum of $256.9 million for Merck in 1999. Among the observations, 8% represent firms that use only direct charitable giving; 24% represent firms that use only foundations for charitable giving; 15% use both direct and foundations for charitable giving and disclose both; and 53% use both direct and foundations for charitable giving, but do not disclose direct giving. As such, for a large number of observations, GIFT is understated.

The mean (median) firm size as measured by market value is $14.6 billion ($4.0 billion). Firm sizes range from $25 million to $512 billion. Roughly 70% of the observations have

nonzero research and development expenditure suggesting that a large proportion of sample firms follow an innovation strategy.[6] About 90% of firms have positive net income and spend on capital expenditures, consistent with the sample period coinciding with economic growth. Advertising expense is missing for 1,123 out of 1,618 observations.[7]

Empirical Models

Our objective is to investigate the causal link between corporate philanthropy and economic performance. For this purpose, we examine (a) current sales, a prime measure of financial performance, as a function of prior charitable giving; and (b) current corporate charitable giving as a function of prior sales. Specifically, as a first step, we estimate the following equations by means of regressions:

$$\log(\text{SALE}_{it}/\text{SALE}_{i(t-1)}) = a_0 + a_1\log(\text{GIFT}_{i(t-1)}/\text{GIFT}_{i(t-2)})$$
$$+ a_2\log(\text{GIFT}_{i(t-2)}/\text{GIFT}_{i(t-3)}) + \text{error} \tag{1}$$

$$\log(\text{GIFT}_{it}/\text{GIFT}_{i(t-1)}) = a_0 + b_1\log(\text{SALE}_{i(t-1)}/\text{SALE}_{i(t-2)})$$
$$+ b_2\log(\text{SALE}_{i(t-2)}/\text{SALE}_{i(t-3)}) + \text{error} \tag{2}$$

where SALE_{it} is firm i's net revenue in year t (data item #12 on COMPUSTAT) and GIFT_{it} is firm i's charitable giving in year t. Because growth in sales and growth in giving are highly right-skewed, we use a logarithmic functional form.

The intuition behind these specifications is based on the Granger causality test (Granger, 1969): If corporate contributions cause sales, then we would expect past values of giving to help predict future sales, but we would not expect past values of sales to help predict future giving. While the intuition of the specifications in equations (1) and (2) is derived from Granger (1969),

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[6] Research and development expenses that are missing in COMPUSTAT are considered zero, because the accounting rule (SFAS 2) requires firms to report such expenses separately. Consequently, firms that do not report R&D expenses are firms that do not spend a material amount on R&D.

[7] There is no accounting rule mandating the disclosure of advertising expense; thus, firms report advertising expense in their financial statements on a voluntary basis. Consequently, assuming that firms that do not report advertising expense have zero advertising expense could understate the effect of advertising expense for the overall sample. Our results are qualitatively similar when we drop advertising from the specifications.

a few points are worth noting. First, equations (1) and (2) are specified in terms of first differences. We use first differences to mitigate concerns about autocorrelation resulting from panel data estimation (see Anderson and Hsiao, 1982).[8] Second, Granger causality tests generally include lagged values of the dependant variable in the specification and investigate whether prior independent variables provide information over and above that provided by prior values of the dependent variable. We incorporate lagged values of the dependent variables in subsequent specifications.

Table 2, Panels A and B, provide the results of estimating equations (1) and (2), respectively. We estimate these equations using the generalized least-squares estimation technique to address the potential overstatement of the t-statistic due to serially-correlated errors[9] Specifically, we allow for the error terms to be serially correlated and firm-specific, i.e., we compute the robust variance–covariance matrix estimates by firm-clusters (see Arellano, 1987, 1989 and Woolridge, 2002 equation 10.59). Panel A indicates that the coefficient estimates on prior-year growth in gifts and two-years-back growth in gifts are 0.05 and 0.02, respectively, both of which are statistically significant at the 0.00 and 0.02 levels. This provides an initial indication that gifts Granger-cause sales.[10] Correspondingly, the coefficient estimates on prior-year growth in sales and two-years-back growth in sales reported in Panel B are 0.46 and 0.09. The coefficient on prior-year sales growth is statistically significant (0.04 level), while the coefficient on two-years-back growth in sales is insignificant. Thus, preliminary results provide mixed evidence of whether sales Granger-cause gifts.

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[8] For example, Granger causality tests for macroeconomic studies use the levels of the savings rate on the money supply for a specific country. Hence, they do not deal with panel data with potential firm-fixed effects.
[9] Results for this and subsequent tests are qualitatively similar when we estimate the empirical models using OLS.
[10] Neither the Granger causality test nor any other empirical test can definitively establish cause and effect. Thus, similar to prior research, we use the term 'Granger-cause' to indicate that one time series is useful in forecasting another.

Controlling for Sales Drivers

This section addresses the concern of a spurious correlation between giving and sales due to correlated omitted variables. The relationship of prior GIFT with current SALE could be due to GIFT being correlated with other fundamental variables that generate sales. We therefore control for four major corporate activities aimed at enhancing sales: research and development, capital expenditures, advertising and promotion, and mergers and acquisitions. Also, as mentioned earlier, the lagged values of the dependent variables are included as independent variables in accordance with typical Granger causality tests.[11] We estimate the following equations:

$$
\begin{aligned}
\log(SALE_{it}/SALE_{i(t-1)}) = {} & a_0 + a_1\log(GIFT_{i(t-1)}/GIFT_{i(t-2)}) + a_2\log(GIFT_{i(t-2)}/GIFT_{i(t-3)}) \\
& + a_3\log(SALE_{i(t-1)}/SALE_{i(t-2)}) + a_4\log(SALE_{i(t-2)}/SALE_{i(t-3)}) \\
& + a_5\log(RD_{i(t-1)}/RD_{i(t-2)}) + a_6\log(RD_{i(t-2)}/RD_{i(t-3)}) \\
& + a_7\log(CEX_{i(t-1)}/CEX_{i(t-2)}) + a_8\log(CEX_{i(t-2)}/CEX_{i(t-3)}) \\
& + a_9\log(ADVT_{i(t-1)}/ADVT_{i(t-2)}) + a_{10}\log(ADVT_{i(t-2)}/ADVT_{i(t-3)}) \\
& + a_{11}MERGER + a_{12}\log(MV_{i(t-1)}) + error \quad\quad\quad (3)
\end{aligned}
$$

$$
\begin{aligned}
\log(GIFT_{it}/GIFT_{i(t-1)}) = {} & a_0 + b_1\log(GIFT_{i(t-1)}/GIFT_{i(t-2)}) + b_2\log(GIFT_{i(t-2)}/GIFT_{i(t-3)}) \\
& + b_3\log(SALE_{i(t-1)}/SALE_{i(t-2)}) + b_4\log(SALE_{i(t-2)}/SALE_{i(t-3)}) \\
& + b_5\log(RD_{i(t-1)}/RD_{i(t-2)}) + b_6\log(RD_{i(t-2)}/RD_{i(t-3)}) \\
& + b_7\log(CEX_{i(t-1)}/CEX_{i(t-2)}) + b_8\log(CEX_{i(t-2)}/CEX_{i(t-3)}) \\
& + b_9\log(ADVT_{i(t-1)}/ADVT_{i(t-2)}) + b_{10}\log(ADVT_{i(t-2)}/ADVT_{i(t-3)}) \\
& + b_{11}MERGER + b_{12}\,MTR_{i(t-1)} + b_{14}\log(MV_{i(t-1)}) + error \quad\quad (4)
\end{aligned}
$$

where RD is annual research and development expense (data item #46 in COMPUTSTAT); CEX is the capital expenditure (data item #128); ADVT is advertising expense (data item #45); MERGER is an indicator variable that equals one if a merger or acquisition is indicated in the COMPUSTAT footnote code AFTNT #1 and zero otherwise; MV is market value of equity computed as the product of stock price (data item #199) and number of shares outstanding (data

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[11] However, Anderson and Hsiao (1981) show that, when using first differences in panel data for mitigating firm-fixed effects, the errors can be correlated with lagged values of the dependent variables. They suggest using an instrument variable approach to alleviate this concern (also see Judson and Owen, 1996). The fundamental factors such as R&D outlays are such instruments that help alleviate the correlation of errors with the lagged values of the dependant variable.

item #25) and controls for size differences; MTR is the marginal tax rate; and the subscripts denote firm i in year j.

In addition to prior sales and lagged gifts, equation (4) includes possible drivers of current giving. McWilliams and Siegel (2000) note that previous tests of the association between CSR and financial performance are misspecified because studies omit research and development. They suggest that research and development and CSR are positively correlated, since aspects of CSR can create innovation (e.g., Russo and Fouts, 1997).[12] Thus, we include research and development and capital expenditures. In addition, as noted earlier, prior research has found a positive association between advertising and giving. Finally, the firm's marginal tax rate will affect the timing of charitable contributions, as firms prefer to make contributions in years when they face high tax rates (Clotfelter, 1985).

The left three columns in Table 3, Panels A and B, provide estimates of equations (3) and (4), respectively, for the full sample. In Panel A, the control/instrumental variables RD, CEX, MERGER, and MV (size) are, as expected, positively associated with future sales growth. The variable ADVT is not associated with future sales growth, possibly due to data on advertisement being missing for a large number of observations. The coefficient on prior-year growth in gifts is 0.03, and the coefficient on two-years-back growth in gifts is 0.02. Notably, the coefficient on prior-year gift growth is statistically significant (0.01 level), and the coefficient on two-years-back growth in giving is marginally significant (0.08 level). Thus, even after controlling for the major sales drivers, our results continue to indicate that corporate contributions Granger-cause sales. We estimate that a one-percent growth in giving in each of the preceding two years

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[12] When McWilliams and Siegel (2000) include R&D in a regression of financial performance on KLD ratings data, they find no association between CSR and financial performance.

contributes on average roughly 7 basis points (0.07%) toward the growth in sales.[13] Note that the sum of the coefficients (elasticities) in equation (3) are less than one which indicates that sales growth occurs under decreasing returns to scale relative to contribution growth.

In Table 3, Panel B, the coefficient on prior-year growth in sales is 0.39, and the coefficient on two-years-back growth in sales is 0.16. The coefficient on prior-year sales growth is marginally significant (0.08 level), while the coefficient on two-years-back growth in sales is insignificant. The coefficients on size and the marginal tax rate are statistically significant. Thus, after controlling for other possible drivers of corporate giving, we find only very weak evidence consistent with an association between prior sales and current giving.[14]

Controlling for Management Quality and Expected Sales Growth

As noted in Section I, it is important to control for the quality of management in examining the relation between CSR and economic performance, as effective managers could be able to increase social and financial performance simultaneously.[15] We use "organization capital" as a proxy for managerial quality. Organization capital is the synthesis of the systems, processes, and organizational designs of a business that can not be completely transferred to other organizations or imitated by them.[16] Such systems and processes include product design systems, marketing techniques, personnel management, project selection, and financing mechanisms, all evolving from the management of an enterprise. Lev and Radhakrishnan (2005)

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[13] This estimate is the difference between the predicted sales growth using growth in gifts pegged at one percent and the predicted sales growth with no growth in gifts. The mean of all explanatory variables other than giving is used to derive the predicted sales growth.

[14] The giving measure includes both cash and product contributions. It is possible that firms make cash gifts when they have the capacity, or liquidity, to give. In untabulated tests, results are qualitatively similar when we include a control for liquidity (cash divided by sales or net current assets divided by sales) in the estimations of Equation 4.

[15] Waddock and Graves (1997) find a link between social performance and the quality of management, where quality of management is defined using the Fortune reputation survey rankings. However, Fryxell and Wang (1994) note that the reputation measure is biased by a financial performance "halo."

[16] Evenson and Westphal (1995) define organization capital as "…the knowledge used to combine human skills and physical capital into systems for producing and delivering want-satisfying products."

develop a measure of organization capital and validate it by showing that it constitutes a major portion of corporate capital market value and is correlated with earnings growth. This measure is based on the notion that organization capital contributes to the abnormal sales generating capability of an organization when compared to peers. The organization capital measure thus is a measure of management quality. Accordingly, we incorporate organization capital for firm i in year t, OC_{it} (as measured by Lev and Radhakrishnan, 2005), in our analysis to distinguish the effect of managerial quality from the effect of charitable contributions growth on sales growth.

The middle three columns of Table 3, Panel A, provides results from estimating equation (3) for the full sample with organization capital as an additional control variable. This proxy for management quality is indeed strongly associated with future sales. However, the coefficient on prior-year growth in gifts (0.03) and the coefficient on two-years-prior growth in gifts (0.02) are both statistical significant, even more so than without organization capital. Thus, after controlling for managerial quality, our results still indicate that gifts Granger-cause sales. The results from estimating equation (4) including organization capital are provided in the middle columns of Table 3, Panel B. Interestingly, the coefficient on organizational capital in predicting giving is negative and marginally significant. The coefficient on prior-year sales (0.45) is again only marginally significant.

Another possible explanation for our results is that managers decide how much to contribute toward charitable causes based on their expectation of future sales and earnings growth. If the decision of GIFT is indeed affected by the manager's growth expectations, then our findings are due to the way in which managers make decisions about charitable contributions, rather than the inherent effect of contributions on business growth. Because giving in advance of actual economic performance would be risky if giving did not provide some

benefit, it is unlikely that managers make giving decisions in this manner. Nevertheless, to accommodate this possibility, we include in the regressions an indicator of a company's expected growth—its market-to-book ratio. This is the ratio of the forward-looking capital market value of the company to its historical book value (net assets on the balance sheet). The measure indicates the aggregate investor expectations of future company growth and has been shown in previous research to be a successful predictor of firm growth (e.g., Fama and French, 1995).

We incorporate the market-to-book ratio into equation (3) and equation (4), along with organization capital as control variables for predicting future sales. The results from estimating these equations are provided in the three right-hand columns of Table 3, Panels A and B. The market-to-book ratio is indeed a powerful indicator of future growth in both sales and charitable giving. However, controlling for expected growth does not alter the previous inferences concerning the relation between giving and revenue. When predicting sales growth, the coefficients on prior-year growth in gifts and two-years-prior growth in gifts are both statistically significant. On the other hand, when predicting contribution growth, the prior-year sales growth is only marginally significant. Overall, the results in Table 3 provide strong evidence that growth in charitable contributions is associated with subsequent sales growth. On the other hand, there is only weak evidence that growth in sales is associated with subsequent increases in giving.

Sensitivity to Public Perception

The next test provides further evidence on the relation between corporate contributions and revenue by focusing on the product market incentive to appear charitable. As noted in Section II, corporate philanthropy can increase name recognition and goodwill among consumers, ultimately building demand for a firm's products. Firms that produce goods and services purchased by individual consumers are more likely to enhance revenue from having a

reputation as a good corporate citizen than firms that produce goods and services for industrial or governmental use. As such, firms with high direct contact with individual consumers have a greater incentive to appear philanthropic for the purpose of boosting revenue. We predict that consumer-oriented firms will be more effective at enhancing sales using their corporate giving.

To test directly this conjecture, we focus on sectors that are highly sensitive to public perception, that is, sectors where the customer is the individual consumer, such as retailers, financial services, and consumer product manufacturers. For these sectors, corporate reputation should be most elastic (reactive) to corporate contributions. Specifically we classify firms in the "Consumer Goods" and "Finance" industries, as defined by Sharpe (1982), as having high sensitivity to consumer perception. Firms in all other industries are classified as having low sensitivity to consumer perception. This classification results in 126 firms (841 observations) in the high consumer sensitivity category and 125 firms (777 observations) in the low consumer sensitivity category. Thus, just slightly over half of the sample is considered to have a significant customer base of individual consumers.

We estimate equations (1) and (2) for firms with high and low sensitivity to public perception separately. The expectation here is that gifts Granger-cause sales for firms that have greater product market incentives to give, but not for firms that produce goods primarily for industrial use. As reported in Table 4, Panel A, the coefficient estimates on prior-year growth in gifts and two-years-back growth in gifts for high consumer sensitivity firms are 0.05 and 0.03, respectively, both of which are highly significant. The coefficient estimates on prior-year growth in gifts and two-years-back growth in gifts for low consumer sensitivity firms are 0.04 and 0.02, respectively, and only prior-year growth in gifts is marginally significant. These results suggest

that firms with high direct contact with individual consumers drive our finding from Table 3 that gifts Granger-cause sales.

On the other hand, as reported in Table 4, Panel B, the coefficient estimates on prior-year growth in sales and two-years-back growth in sales in predicting giving growth are 0.19 and 0.24, respectively, for high consumer sensitivity firms. Neither of these coefficients is statistically significant. The coefficient estimates on prior-year growth in sales and two-years-back growth in sales are 0.72 and –0.05, respectively, for low consumer sensitivity firms. The coefficient on prior-year sales is statistically significant. Thus, the possibility that sales Granger-cause gifts appears limited to firms that are less sensitive to consumer perception.

Table 4, Panels C and D, provide results from the estimation of equations (3) and (4) for firms with high and low sensitivity to public perception separately. In Panel C, the coefficient estimates on prior-year growth in gifts and two-years-back growth in gifts for high consumer sensitivity firms are 0.04 and 0.02, respectively, which are significant at the 0.01 and 0.07 levels. However, the coefficient estimates on prior-year growth in gifts and two-years-back growth in gifts for low consumer sensitivity firms, 0.02 and 0.01, respectively, are not significant. The results for both high consumer sensitivity and low consumer sensitivity firms remain unchanged when controls are included for managerial quality and expected growth, as reported in Table 4, Panel C. We estimate that the proportion of actual revenue growth explained by charitable contributions is 0.32% on average for consumer sensitive firms. Overall, this evidence is consistent with our prediction that firms with a product market incentive to have a charitable reputation use giving to enhance revenue. After controlling for other determinants of sales growth, there is no evidence that firms that are less sensitive to public perception use contributions to grow sales.

Table 4, Panel D, reports that the coefficient estimates on the lagged $\log(SALE_{t-1}/SALE_{t-2})$ and $\log(SALE_{t-2}/SALE_{t-3})$ for high consumer sensitivity firms are 0.26 and 0.48, respectively, which are not significant. For low consumer sensitivity firms, the coefficient estimates on $\log(SALE_{t-1}/SALE_{t-2})$ and $\log(SALE_{t-2}/SALE_{t-3})$ are 0.48 and –0.019. Prior-year growth in sales is marginally significant in predicting growth in charitable giving for firms with low sensitive to public perception. The results for both types of firms are similar when controls for managerial quality and expected growth are included in the estimation, as reported in Table 4, Panel D. Thus, there is no evidence that sales Granger-cause growth in giving for consumer-oriented firms and only weak evidence that sales Granger-cause growth in giving for other firms.

It is important to note that the focus of this study was on the relation between revenue and corporate philanthropy. The evidence that indicates that gifts from firms with low sensitivity to public perception do not increase sales does not imply that these firms are not using their charitable contribution programs in a profit-maximizing way. Even though these firms do not receive a boost in revenue, corporate philanthropy might benefit them in other ways (educating workforce, negotiating with regulators, etc.) Overall, the results in Table 4 reinforce the importance of examining incentives for engaging in CSR on an industry-level.

V. Concluding Remarks

A key question concerning CSR activities is whether they enhance traditional corporate goals, such as profit maximization and shareholder value creation, or whether such activities, while doing good, consume resources without adequate return. Much of the debate about the legitimacy of and justification for CSR would be settled if it is convincingly shown that such activities further traditional business goals. In this study we provide such evidence. Using a

large sample of charitable contributions made by U.S. public companies, and a statistical methodology that distinguishes causation from association, we document that such contributions enhance the future sales growth of donors—a prime objective of business enterprises.

The finding that corporate gifts contribute to subsequent sales growth is incremental to the traditional drivers of growth: capital expenditures, R&D, advertising, and corporate acquisitions. In particular, corporate charitable contributions are effective in enhancing revenues in the "consumer sectors," such as retailers and financial services. In sectors where the customer is not an individual, corporate contributions do not appear to enhance future sales. We also examine the impact of "managerial quality," and find that, while it contributes considerably to sales growth, it does not subsume the effect of corporate giving on sales growth. While we find only weak evidence consistent with sales growth spurring increased giving, we do not definitively rule out the possibility that there is a simultaneous relationship, or "virtuous circle" (Waddock and Graves, 1997b), between corporate contributions and revenue.

Several important questions remain to be addressed by future studies. We have shown that corporate charitable contributions affect, on average, future sales growth, but is the current level of giving optimal, suboptimal, or excessive? In addition, further research is needed to investigate other mechanisms by which corporate philanthropy can give firms a competitive advantage (i.e., spurring innovation, improving labor force, influencing legislators and regulators) and to examine the effectiveness of different types of philanthropy programs (e.g., product giving, volunteering). Finally, it is important to gain an understanding of how corporate giving interacts with firms' other CSR activities and whether corporate giving does, indeed, achieve the desired social impact.

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Table 1: Sample Description

Panel A: Industry Representation

Industry	Firms		Observations	
	Number	**Percentage**	**Number**	**Percentage**
1 Basic Industries	26	10.36	166	10.26
2 Capital Goods	39	15.54	258	15.95
3 Construction	7	2.79	42	2.60
4 Consumer Goods	96	38.25	623	38.50
5 Energy	8	3.19	49	3.03
6 Finance	33	13.15	218	13.47
7 Transportation	15	5.98	86	5.32
8 Utilities	26	10.36	172	10.63
9 Other	1	0.40	4	0.25
TOTAL	251	100.00	1,618	100.00

Panel B: Year Representation

Year	Observations	
	Number	**Percentage**
1992	147	9.09
1993	169	10.44
1994	188	11.62
1995	204	12.61
1996	200	12.36
1997	212	13.10
1998	197	12.18
1999	169	10.44
2000	132	8.16
TOTAL	1,618	100.00

Industry classifications are based on Sharpe (1982). The following 4-digit SIC codes are assigned to each group. (1) basic industries: 1000–1299, 1400–1499, 2600–2699, 2800–2829, 2870–2899, 3300–3399; (2) capital goods: 3400–3419, 3440–3599, 3670–3699, 3800–3849, 5080–5089, 5100–5129, 7300–7399; (3) construction: 1500–1599, 2400–2499, 3220–3299, 3430–3439, 5160–5219; (4) consumer goods: 0000–0999, 2000–2399, 2500–2599, 2700–2799, 2830–2869, 3000–3219, 3420–3429, 3600–3669, 3700–3719, 3850–3879, 3880–3999, 4830–4899, 5000–5079, 5090–5099, 5130–5159, 5220–5999, 7000–7299, 7400–9999; (5) energy: 1300–1399, 2900–2999; (6) finance: 6000–6999; (7) transportation: 3720–3799, 4000–4799; (8) utilities: 4800–4829, 4900–4999; (9) others: all other SIC codes.

Table 1: Sample Description (cont'd)

Panel C: Descriptive Statistics

Variable	*N*	Mean	Standard deviation	Min.	First quartile	Median	Third quartile	Max.
SALE ($ millions)	1,618	8,911	15,224	84	1,402	3,592	10,314	165,013
GIFT ($ millions)	1,618	8.93	21.54	0.003	0.82	1.99	6.17	256.90
$(SALE_t/ SALE_{t-1}) - 1$ (%)	1,618	7.87	11.33	-50.60	1.57	6.64	12.97	242.12
$(GIFT_t/ GIFT_{t-1}) - 1$ (%)	1,618	4.26	14.06	-98.83	-6.45	4.46	17.40	4940.04
RD ($ millions)	1,618	247	696	0	0	7	106	6,822
CEX ($ millions)	1,618	682	1,441	0	38	159	634	15,525
ADVT ($ millions)	495	473	654	1	52	183	658	3,704
NI ($ millions)	1,618	558	1,184	-8,101	56	192	645	10,717
MV ($ millions)	1,618	14,580	35,903	25	1,340	4,018	11,802	512,832
OC ($ millions)	1,618	1,577	3,207	0	174	511	1,678	44,878
MB	1,618	3.54	4.01	0.03	1.69	2.46	3.89	81.92
MTR (%)	1,618	28	13	0	33	35	35	38
MERGER	1,618	0.17	0.38					

Variable definitions: SALE = annual revenue (data item #12); GIFT = direct corporate giving + corporate foundation giving; RD = research and development (data item #46 or zero if data item #46 is missing); CEX = capital expenditures (data item #128); ADVT = advertising (data item #45); NI = net income before extraordinary items (data item #18); MV = market value (data item #199 × data item #125); OC = organization capital from Lev and Radhakrishnan (2005); MB = market-to-book ratio ((data item #199)/(data item #60)); MTR = marginal tax rate from Graham (1996a, 1996b), and MERGER equals 1 if AFTNT1 indicates a merger or acquisition and 0 otherwise.

Table 2: Gifts and Sales, Preliminary Analysis for Causality

Panel A: Equation (1) for full sample ($n = 1,618$)

	Dependant variable = $\log(SALE_t/ SALE_{t-1})$		
	Coefficient	***t*-statistic**	***P***
$\log(GIFT_{t-1}/GIFT_{t-2})$	0.05	3.60	0.00
$\log(GIFT_{t-2}/GIFT_{t-3})$	0.02	2.31	0.02
Adj. R^2		1.68%	

Panel B: Equation (2) for full sample ($n = 1,618$)

	Dependant variable = $\log(GIFT_t/ GIFT_{t-1})$		
	Coefficient	***t*-statistic**	***P***
$\log(SALE_{t-1}/SALE_{t-2})$	0.46	2.11	0.04
$\log(SALE_{t-2}/SALE_{t-3})$	0.09	0.52	0.60
Adj. R^2		0.52%	

See Table 1 for variable definitions.

Table 3: Gifts and Sales, Granger Causality for Full Sample

Panel A: Equation (3) for full sample (n =1,618); dependent variable = log($SALE_t/SALE_{t-1}$).

	Equation (3) as written			With Organizational Capital			With Market-to-Book Ratio		
	Coeff.	t-stat	P	Coeff.	t-stat	P	Coeff.	t-stat	P
log($GIFT_{t-1}/GIFT_{t-2}$)	**0.03**	**2.79**	**0.01**	**0.03**	**3.18**	**0.00**	**0.03**	**3.07**	**0.00**
log($GIFT_{t-2}/GIFT_{t-3}$)	**0.02**	**1.77**	**0.08**	**0.02**	**2.20**	**0.03**	**0.02**	**2.06**	**0.04**
log($SALE_{t-1}/SALE_{t-2}$)	0.39	6.65	0.00	0.32	5.28	0.00	0.27	4.37	0.00
log($SALE_{t-2}/SALE_{t-3}$)	−0.08	−1.39	0.16	−0.12	−2.21	0.03	−0.16	−3.01	0.00
log(RD_{t-1}/RD_{t-2})	0.04	2.00	0.05	0.05	2.28	0.02	0.05	2.32	0.02
log(RD_{t-2}/RD_{t-3})	0.01	1.43	0.15	0.02	1.96	0.05	0.02	1.92	0.06
log(CEX_{t-1}/CEX_{t-2})	0.02	2.54	0.01	0.02	2.62	0.00	0.02	2.64	0.01
log(CEX_{t-2}/CEX_{t-3})	0.01	0.24	0.81	−0.01	−0.06	0.95	−0.01	−0.14	0.89
log($ADVT_{t-1}/ADVT_{t-2}$)	0.01	0.47	0.64	0.01	0.12	0.90	−0.01	−0.08	0.93
log($ADVT_{t-2}/ADVT_{t-3}$)	0.02	0.98	0.33	0.01	0.35	0.72	0.00	0.03	0.97
$MERGER_{t-1}$	0.05	6.16	0.00	0.05	6.15	0.00	0.04	5.91	0.00
log(MV_{t-1})	0.01	4.06	0.00	−0.01	−2.34	0.02	−0.02	−4.60	0.00
log(OC_{t-1})				0.02	5.65	0.00	0.03	7.12	0.00
log(MB_{t-1})							0.03	4.58	0.00
Adj R^2	14.72%			17.40%			19.09%		

Table 3: Gifts and Future Sales, Granger Causality for Full Sample (cont'd)

Panel B: Equation (4) for full sample (n =1,618); dependent variable = $\log(GIFT_t/GIFT_{t-1})$.

	Equation (4) as written			With Organizational Capital			With Market-to-Book Ratio		
	Coeff.	*t*-stat	*P*	Coeff.	*t*-stat	*P*	Coeff.	*t*-stat	*P*
$\log(GIFT_{t-1}/GIFT_{t-2})$	–0.22	–3.40	0.00	–0.22	–3.45	0.00	–0.23	–3.50	0.00
$\log(GIFT_{t-2}/GIFT_{t-3})$	–0.01	–0.21	0.83	–0.02	–0.27	0.78	–0.01	–0.19	0.84
$\log(SALE_{t-1}/SALE_{t-2})$	**0.39**	**1.74**	**0.08**	**0.45**	**1.92**	**0.06**	**0.41**	**1.77**	**0.08**
$\log(SALE_{t-2}/SALE_{t-3})$	**0.16**	**0.99**	**0.32**	**0.21**	**1.27**	**0.21**	**0.14**	**0.79**	**0.43**
$\log(RD_{t-1}/RD_{t-2})$	0.04	0.56	0.57	0.03	0.50	0.62	0.03	0.44	0.66
$\log(RD_{t-2}/RD_{t-3})$	0.04	1.63	0.10	0.04	1.59	0.11	0.04	1.53	0.13
$\log(CEX_{t-1}/CEX_{t-2})$	0.03	1.07	0.28	0.03	1.09	0.28	0.03	1.04	0.30
$\log(CEX_{t-2}/CEX_{t-3})$	0.04	1.62	0.11	0.04	1.68	0.09	0.04	1.66	0.10
$\log(ADVT_{t-1}/ADVT_{t-2})$	0.03	0.32	0.75	0.04	0.39	0.69	0.05	0.45	0.65
$\log(ADVT_{t-2}/ADVT_{t-3})$	–0.11	–0.79	0.43	–0.10	–0.72	0.47	–0.11	–0.77	0.44
$MERGER_{t-1}$	0.02	0.73	0.46	0.02	0.76	0.44	0.01	0.57	0.57
MTR_{t-1}	0.20	2.67	0.01	0.19	2.61	0.01	0.16	2.08	0.04
$\log(MV_{t-1})$	0.03	4.30	0.00	0.04	4.12	0.00	0.02	2.10	0.04
$\log(OC_{t-1})$				–0.02	–1.98	0.05	–0.01	–0.81	0.41
$\log(MB_{t-1})$							0.04	2.06	0.04
Adj R^2	5.25%			5.44%			5.94%		

See Table 1 for variable definitions.

Table 4: Gifts and Future Sales, Granger Causality by Sensitivity to Public Perception

Panel A: Equation (1) by sensitivity to public perception; dependent variable = $\log(\text{SALE}_t/\text{SALE}_{t-1})$.

	High Consumer Sensitivity ($n = 841$)			Low Consumer Sensitivity ($n = 777$)		
	Coefficient	*t*-statistic	*P*	Coefficient	*t*-statistic	*P*
$\log(\text{GIFT}_{t-1}/\text{GIFT}_{t-2})$	0.05	3.61	0.00	0.04	1.85	0.06
$\log(\text{GIFT}_{t-2}/\text{GIFT}_{t-3})$	0.03	2.58	0.01	0.02	0.88	0.38
Adj. R^2		2.58%			1.06%	

Panel B: Equation (2) by sensitivity to public perception; dependent variable = $\log(\text{GIFT}_t/\text{GIFT}_{t-1})$.

	High Consumer Sensitivity ($n = 841$)			Low Consumer Sensitivity (n=777)		
	Coefficient	*t*-statistic	*P*	Coefficient	*t*-statistic	*P*
$\log(\text{SALE}_{t-1}/\text{SALE}_{t-2})$	0.19	0.54	0.58	0.72	2.81	0.00
$\log(\text{SALE}_{t-2}/\text{SALE}_{t-3})$	0.24	0.95	0.35	–0.05	–0.23	0.82
Adj. R^2		0.17%			1.82%	

Table 4: Gifts and Future Sales, Granger Causality by Sensitivity to Public Perception (cont'd)

Panel C: Equation (3) by sensitivity to public perception; dependent variable = $\log(SALE_t/SALE_{t-1})$.

	High Consumer Sensitivity (n = 841)			Low Consumer Sensitivity (n = 777)			High Consumer Sensitivity (n = 841)			Low Consumer Sensitivity (n = 777)		
	Coeff.	t-stat	P	Coeff.	t-stat	P	Coeff.	t-stat	P	Coeff.	t-stat	P
$\log(GIFT_{t-1}/GIFT_{t-2})$	**0.04**	**2.75**	**0.01**	**0.02**	**1.16**	**0.25**	**0.04**	**2.78**	**0.01**	**0.02**	**1.09**	**0.28**
$\log(GIFT_{t-2}/GIFT_{t-3})$	**0.02**	**1.83**	**0.07**	**0.01**	**0.84**	**0.40**	**0.02**	**1.83**	**0.07**	**0.01**	**0.84**	**0.40**
$\log(SALE_{t-1}/SALE_{t-2})$	0.37	5.08	0.00	0.29	3.29	0.00	0.29	3.94	0.00	0.14	1.44	0.15
$\log(SALE_{t-2}/SALE_{t-3})$	–0.02	–0.24	0.81	–0.15	–1.91	0.06	–0.08	–1.04	0.29	–0.26	–3.47	0.00
$\log(RD_{t-1}/RD_{t-2})$	0.04	1.28	0.20	0.05	2.45	0.02	0.04	1.55	0.12	0.05	2.46	0.02
$\log(RD_{t-2}/RD_{t-3})$	0.01	0.45	0.65	0.02	1.59	0.11	0.01	0.94	0.34	0.02	1.51	0.13
$\log(CEX_{t-1}/CEX_{t-2})$	0.01	1.11	0.26	0.08	4.25	0.00	0.01	1.16	0.24	0.08	4.44	0.00
$\log(CEX_{t-2}/CEX_{t-3})$	0.01	0.15	0.88	0.01	0.81	0.42	–0.01	–1.69	0.09	0.01	0.43	0.66
$\log(ADVT_{t-1}/ADVT_{t-2})$	–0.03	–1.14	0.25	0.07	1.35	0.18	–0.04	–1.61	0.11	0.06	1.08	0.28
$\log(ADVT_{t-2}/ADVT_{t-3})$	–0.02	–0.86	0.39	0.07	2.10	0.04	–0.04	–2.23	0.03	0.06	1.42	0.15
$MERGER_{t-1}$	0.04	3.33	0.00	0.06	4.89	0.00	0.04	3.32	0.00	0.05	4.45	0.00
$\log(MV_{t-1})$	0.01	3.50	0.00	0.01	1.99	0.05	0.03	4.50	0.00	-0.02	-4.27	0.00
$\log(OC_{t-1})$							0.01	1.43	0.16	0.03	5.35	0.00
$\log(MB_{t-1})$							0.04	2.78	0.01	0.05	5.44	0.00
Adj R^2	12.88%			20.96%			16.40%			27.31%		

Table 4: Gifts and Future Sales, Granger Causality by Sensitivity to Public Perception (cont'd)

Panel D: Equation (4) by sensitivity to public perception; dependent variable = log(GIFT$_t$/GIFT$_{t-1}$).

	High Consumer Sensitivity (n = 841)			Low Consumer Sensitivity (n = 777)			High Consumer Sensitivity (n = 841)			Low Consumer Sensitivity (n = 777)		
	Coeff.	t-stat	P	Coeff.	t-stat	P	Coeff.	t-stat	P	Coeff.	t-stat	P
log(GIFT$_{t-1}$/GIFT$_{t-2}$)	-0.21	-1.93	0.06	-0.24	-4.19	0.00	-0.21	-1.93	0.06	-0.27	-4.51	0.00
log(GIFT$_{t-2}$/GIFT$_{t-3}$)	-0.07	-0.76	0.44	0.03	0.43	0.67	-0.07	-0.76	0.44	0.01	0.05	0.96
log(SALE$_{t-1}$/SALE$_{t-2}$)	**0.26**	**0.73**	**0.47**	**0.48**	**1.78**	**0.08**	**0.30**	**0.89**	**0.37**	**0.39**	**2.00**	**0.04**
log(SALE$_{t-2}$/SALE$_{t-3}$)	**0.48**	**1.59**	**0.11**	**-0.19**	**-0.92**	**0.36**	**0.53**	**1.68**	**0.10**	**-0.27**	**-1.26**	**0.21**
log(RD$_{t-1}$/RD$_{t-2}$)	-0.18	-1.01	0.31	0.12	2.62	0.01	-0.18	-1.01	0.31	0.09	2.23	0.03
log(RD$_{t-2}$/RD$_{t-3}$)	-0.01	-0.20	0.84	0.06	2.21	0.03	-0.01	-0.22	0.82	0.04	1.87	0.06
log(CEX$_{t-1}$/CEX$_{t-2}$)	0.03	1.28	0.20	-0.01	-0.16	0.87	0.03	1.29	0.20	-0.01	-0.18	0.85
log(CEX$_{t-2}$/CEX$_{t-3}$)	0.02	0.66	0.51	0.10	2.67	0.01	0.02	0.69	0.50	0.10	2.84	0.01
log(ADVT$_{t-1}$/ADVT$_{t-2}$)	-0.06	-0.51	0.61	0.07	0.47	0.64	-0.06	-0.46	0.64	0.08	0.54	0.59
log(ADVT$_{t-2}$/ADVT$_{t-3}$)	-0.33	-1.69	0.09	0.19	1.69	0.09	-0.32	-1.65	0.10	0.18	1.68	0.10
MERGER$_{t-1}$	0.04	0.97	0.33	0.01	0.09	0.92	0.03	0.94	0.35	-0.01	-0.15	0.88
MTR$_{t-1}$	0.11	0.83	0.41	0.25	2.53	0.01	0.10	0.80	0.42	0.23	2.46	0.02
log(MV$_{t-1}$)	0.03	2.77	0.01	0.02	3.48	0.00	0.04	1.89	0.06	0.01	0.77	0.44
log(OC$_{t-1}$)							-0.01	-0.84	0.40	-0.01	-0.14	0.88
log(MB$_{t-1}$)							-0.01	-0.34	0.74	0.10	3.56	0.00
Adj R^2	4.81%			12.04%			4.87%			14.72%		

See Table 1 for variable definitions. High consumer sensitivity includes consumer goods and finance industries as defined by Sharpe (1982); Low consumer sensitivity includes all other industries.