Corporate Profits and Social Responsibility: "Subsidization" of Corporate Income Under Charitable Giving Tax Laws

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Private U.S. corporations donated approximately $6 billion to nonprofit organizations in 1994. Corporations may donate money both directly to charities and indirectly through a corporate-sponsored foundation. Tax and financial advantages, as well as differences in corporate image, arise due to policy differences in the treatment of certain gifts. This paper presents a new model of corporate giving, and examines the financial implications of both direct and corporate foundation donations. Important considerations are corporate and foundation tax rates, the occurrence of donations to non-U.S. (or other non-tax-deductible) charities, the sale of assets to fund corporate foundations, and the effects of contributions over time. Comparative statics from a two-period model provide theoretical motivations for making certain types of gifts in certain ways. The results show that tax deductibility, tax rates, amounts of gifts made overseas, and capital gains provisions for corporate and foundation use affect giving. In fact, use of a nonprofit foundation for making contributions often results in a "subsidization" of monies to be distributed for charitable purposes and, hence, more after-tax income for the corporation.

Keywords: Corporate giving; Nonprofit organizations; Corporate social responsibility; Nonprofit subsidization; Nonprofit tax laws

JEL classification: G35

[1] The Council for Financial Aid to Education (CFAE) estimates a total of $6 billion for all company-sponsored foundation giving in 1992. This figure, nearly four times that of the $1.57 billion reported by the Foundation Center, includes not only cash, but also product, property and equipment, and gifts of securities (Council for Aid to Education, p. 41).

Table 1. U.S. Charitable Giving, by Type of Donor, 1989, (in Billions)

Source	Total		Excluding Religion	
	Amount	Percent	Amount	Percent
Individuals	$98.6	83%	$36.8	66%
Foundations	7.9	7%	7.9	14%
Corporations	4.2	4%	4.2	8%
Bequests	7.0	6%	7.0	12%
Total	$115.9	100%	$55.9	100%

Note: Corporate foundation giving is included in foundation giving. Source: Salamon (1994, p. 20).

Introduction

U.S. corporations gave nearly $6 billion to charities in 1994; of that amount, more than $1.57 billion came from corporate foundations.[1] However, out of the nearly two million firms in the United States which had taxable income in 1991, only 1,897 had corporate foundations.[2] Why do many firms choose to give only directly to charity, while firms with foundations typically give both directly and through a foundation? Despite the large percentage of corporate gifts made through foundations, and the relatively large literature on corporate giving, very few researchers have examined corporate foundations. The purpose of this paper is to set out the important financial considerations of corporate direct and foundation giving, and to develop a model capturing the financial considerations over two time periods.

How important are corporate and corporate-sponsored foundation gifts? In the scheme of all giving, corporate donations make up only a small part: Corporate giving accounted for 4% of all giving in 1989. Table 1 (U.S. Charitable Giving, by Type of Donor, 1989) shows this figure increased to just over 5% when gifts made by corporate foundations were added. However, corporations rarely make gifts to religious organizations; corporate direct giving accounted for 8%, and the addition of corporate foundation giving boosted the percentage to 10.7% of all non-religious giving for the same time period.

Although corporate gifts account for a relatively small percentage of all giving, the impact of $6 billion in gifts is important to nonprofit recipients. Providers of educational, social service, and other nonprofit services often rely on corporate sponsorship to run their programs. Some argue that current tax policies allow services usually provided by government to be "subsidized" through charitable giving provisions. In fact, the subsidy is generous. Table 2 (Corporations, Profits, Taxes, Foundations, and Charitable Giving) shows corporate gifts were about 1.66% of corporate (pretax) profits (over $362 billion) in 1991. Given a corporate average tax rate of over 35%, and marginal rates for large corporations of 34%–38%, gift deductions represent approximately $2 billion in lost tax revenue (34% of the profits of the $6 billion which was donated).

An additional amount of revenue is lost due to tax policies on private foundations. Company-sponsored foundations held approximately $6.6 billion in assets in 1991. The taxes due on the return on these assets were substantially smaller than the taxes due on identical returns to for-profit corporations. Additionally, the fact

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[2] *Guide to U.S. Foundations, Their Trustees, Officers and Donors, Vol. 1.* (1994). Compiled by The Foundation Center. (C. Edward Murphy, ed. Joan Seabourne, asst. ed).

Table 2. Corporations, Profits, Taxes, Foundations, and Charitable Giving, 1991

	1991 (Dollars are in billions)
Number of corporations	3,803,000
Corporations w/net income	1,942,000
Corporate profits before taxes	$362.3
Corporate taxes paid	$129.8
Corporate gifts	$6.0
U.S. corporate foundations (1992 estimate)	1897
Assets of corporate foundations	$6.6
Corporate foundation gifts	$1.57

that so few corporate foundations exist makes one question the policies allowing tax-deductible funding of social welfare and other non-profit-maximizing activities by business. With the average amount given by a corporate foundation being over $800,000 annually, redistribution of funds for social and other nonprofit programs is decided by a small group of relatively powerful givers.

Finally, current American culture and political correctness increasingly demand socially-responsible corporations. Along with motives to increase profits, and enjoy well-paying jobs and perks, company executives now feel added pressure to respond to the needs of the community. Galaskiewicz (1985) and others have shown that in some areas of the country, tithing clubs, or the business elite put pressure on corporate executives to donate a fixed percentage of pretax profits, largely in response to pressures to build better communities. Social and geographical pressures have significant effects on corporate executives' decisions about corporate and foundation giving.

Whether one agrees with the current policies allowing corporate and foundation gifts to be deducted in certain ways, it is important to examine both corporate direct gifts to charity and those made by corporate foundations. The remainder of this paper sets out to add to current understanding of the corporate giving process.

The paper is divided into four sections. Section I introduces corporate giving to charity and reviews the literature on corporate philanthropy. Section II highlights the tax law and other business considerations for corporate giving. In Section III, a model of corporate giving is introduced where the cost, or price, of giving directly to charities and through a corporate foundation is analyzed. Sections IV and V discuss specific policy implications for corporate giving and corporate foundations and summarize the findings.

I. Corporate Giving and the Extant Literature[3]

Corporate giving is generally defined as tax-deductible cash contributions, plus the deductible value of company products, property, or in-kind items to a charitable organization within the United States, plus any non-deductible donations. Legitimate tax deductions result from gifts made only to an activity classified as charitable under Internal Revenue Code 501(c)(3), including the corporate foundation. Giving from a company-sponsored foundation is governed by the tax law on

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[3]The sections on tax laws draw heavily on material in Webb (1994).

private foundations defined under Internal Revenue Code 509(a). Private foundations are generally "nongovernment, nonprofit organizations having a principal fund, managed by its own trustees and directors, and established to maintain or aid charitable, educational, religious, or other activities serving the public good."[4] Company foundations derive funds from a profit-making company but are legally separate entities which make grants "usually on a broad basis although not without regard for the business interest of the corporation."[5]

Studies of corporate giving have concentrated primarily on the amount and timing of aggregate contributions in relation to the price of giving, corporate income, firm size, industry structure, and advertising. Clotfelter (1985, pp. 194–5) provides a summary of the economics studies of both theoretical models and empirical work. Models of corporate giving have been based on four possible reasons for corporate giving—profit-maximization, altruism of the owners, social responsibility or duty, and managerial utility.

The first, and largest body of literature on corporate giving employs aggregated corporate data from the Internal Revenue Service (IRS). Important empirical studies testing the profit-maximization and altruism motivations for giving have been performed by Navarro (1988a, 1988b), Clotfelter (1985), Maddox/McElroy and Siegfried (1981a, 1981b, 1982), Bennett and Johnson (1980), Whitehead (1976), Nelson (1970), Schwartz (1968), and Johnson (1966). Oliver Williamson (1967) originated the idea that the primary motives of management have a systematic and significant impact on business behavior. Navarro (1988a), Clotfelter (1985), and Goldberg (1979) employed models of managerial utility in their work. All of these studies (except Johnson) employed econometric analysis to examine the problem of how much corporations give.

A smaller literature has attempted to provide corporate giving information on individual firms. Three articles of note are Maddox and Siegfried (1981b), Navarro (1988b), and Stotsky (1991). However, not study has specifically examined the interaction between corporate foundations and direct corporate charitable giving. Stotsky's (unpublished) study analyzes the determinants of giving by corporate foundations, and focuses on the interaction of foundation giving and federal government support. It explores the relationship between corporate direct and foundation gifts, but does not model the relationship between foundation assets versus assets of the firm used for corporate giving, nor other differences between corporate direct and foundation giving.

Both bodies of literature provide empirical evidence supporting all of the hypotheses—empirical work has shown behavior consistent with each of the four motivations. Positive relationships have been found between corporate profits and giving, and corporate assets and giving. A negative relationship has been found between tax rates (the price of giving) and gifts, and unclear relationships have been found between other variables and giving. Thus, it is not clear what motivates corporate contributions. Additionally (and unfortunately), the lack of firm-specific (and reliable) data hampered the studies. The data collection process, and willingness of corporations to provide data, seem to be improving, and more definitive

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[4] *The Foundation Directory* (1993 edition, p. vi). For more on tax and government policies affecting corporate foundations, see Webb (1994).

[5] Ibid.

conclusions about the motivation for corporate giving are likely forthcoming in the next several years.

Whether corporate executives are motivated by profit-maximization, altruism, social responsibility, or some other reason, efficient use of corporate dollars results in more discretionary corporate funds. Even if executives are motivated by their own utilities or self-interests, shareholders and top management likely focus on net profitability and structure incentives in such a way as to encourage efficient allocation and use of corporate resources. Establishing the most cost-effective way to meet goals of the giving program is reflected in net profits, and is relevant to a firm's choice of vehicle for giving. This paper presents a new model of corporate giving which considers cost-effectiveness. Examined are the effects of various types of gifts on net profits, including gifts made through a foundation and those made directly to charity.

II. Tax Laws and Business Considerations for Corporate Giving

Corporations are allowed to make donations in any amount to any group. In order to deduct a gift from taxable income, a firm's donation must go to a 501(c)(3) organization within the United States. Thus, tax deductibility is granted to gifts made to a corporate foundation. The tax code limits deductibility: up to 10% of a firm's annual taxable income may be deducted.[6] Any contributions made in excess of 10% may be carried forward to offset profits made in later years. Additionally, since 1981, gifts of company product or property may be deducted only on a cost basis, except for certain gifts made to enhance technology or to assist infants, the infirm or the needy. With a few exceptions, gifts are treated the same as any other operating expense or cost of doing business: the cost of the gift is the complement of the marginal tax rate.

Why would a firm choose to use a foundation? Smith (no date) has noted three general considerations: the business cycle, income taxes, and image considerations. A corporate foundation shelters the firm from the ups and downs of the business cycle, allowing corporate giving to remain fairly constant over time. Webb (1994) showed preliminary evidence that income taxes are avoided by making larger contributions to the foundation during years of higher profits and taxes, and giving less in other years. A corporate foundation may also strengthen the image of the firm: it may signal the firm's intention to be socially responsible. Webb also suggested that firms tend to "smooth" giving, implying that image or business cycle considerations are important determinants of the decision to give through a foundation. The final decision, however, depends upon how specific advantages or drawbacks of corporate foundation use affect the particular firm.

The advantages to using a corporate foundation are numerous.[7] Among the financial reasons for setting up a foundation are the incentives to reduce corporate tax liability by giving to the foundation in higher-profit years, the ability to fund a

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[6] Until 1981, only 5% of taxable income could be donated in any year. The Economic Recovery Tax Act of 1981 raised the ceiling to 10%. Note taxable income includes depreciation allowances which change over time.

[7] For more on advantages and disadvantages of corporate foundations, see Webb (1994, p. 48).

foundation with company stock or appreciated property, where the foundation may sell the assets and not pay capital gains taxes on returns from the sale, and to use a foundation to make donations outside the United States. (An interesting story is that of the AT & T Foundation. In the mid-1980s, AT & T donated a building in downtown Manhattan to its newly-established corporate foundation. The foundation could sell the building and pay no capital gains taxes on earnings, or could rent the building, using rents to fund the corporate charitable giving program.) In recent years, corporate foundation assets have grown rapidly; in 1981, they were estimated at $2.5 billion; in 1992, they rose to $6.3 billion (The Foundation Center, p. 42). However, unlike independent foundations, they generally depend on their sponsoring companies for continued contributions. For financial and other reasons, corporate foundations complicate the issue of deductibility for most types of gifts.

The primary disadvantages of using a corporate foundation result from the Tax Reform Act of 1969 (TRA69). TRA69 requires foundations to pay a 2% excise tax on earnings, and to pay out at least 5% of foundation assets annually. The IRS prohibits some gifts from being made through a foundation. For example, scholarship programs set up through a company foundation may give awards to no more than 25% of eligible applicants. Many companies have scholarship programs for the children of employees, and do not want to be restricted to giving a certain number of scholarships. Foundations may have additional costs, as well. Finally, making donations through a foundation involves more public accountability; corporate direct gifts are not a matter of public record in terms of the size or recipient of a gift.

In summary, total giving is comprised of all gifts to charities, whether made through the corporate foundation or directly from the company. Support given to a corporate-sponsored foundation is considered a deductible charitable donation, as are gifts made to charities within the United States. If a corporation has a foundation, the tax deduction for charitable contributions is equal to the sum of gifts made directly to U.S. charities and gifts made to the corporate foundation. For a firm without a corporate foundation, gifts made directly to U.S. charities and the tax deduction are one and the same.[8]

III. A Model of Corporate Giving for a Profit-Maximizing Firm

In a profit-maximizing firm, corporate executives evaluate the costs of making contributions directly versus making (at least some) contributions through a foundation. For the present, assume administrative costs of operating a corporate foundation are equal to those for a corporate (direct) giving program. The choice between direct corporate giving and foundation giving depends upon tax rates, rates of return on investments, types of gifts made (cash, property, stock, other assets), and the size of foundation assets. In addition, specific tax laws having to do with types of gifts (property, scholarships, and the like) affect the choice of vehicle for certain corporate gifts. The following paragraphs show simple examples of the financial effects of direct and foundation giving. These examples are formalized in the next section.

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[8] For a diagram and more discussion on tax deductibility, see Webb (1994, pp. 46–7).

A corporation's cost of giving directly to charities is the amount of the contribution less the tax deduction received from making the contribution (provided the amount of donations does not exceed 10% of taxable income).[9] For example, if a gift of G_D = $40,000 is made to charity, and the corporation's marginal tax rate is τ_C = 34% (the current marginal tax rate for firms in a certain tax bracket), the cost of the contribution is:

$$G_D(1 - \tau_C) = \$40,000(1 - 0.34) = \$26,400$$

Alternatively, executives may choose to give $40,000 to the corporate foundation with the intent of making donations of $40,000 to charities within the year (this is typically called a "pass-through"). As in the case above, the corporation's cost of giving is equal to the donation, less the tax deduction for gifts to the corporate foundation. However, if the foundation has invested assets, it is less expensive for the company to give the $40,000 first to the foundation, and then from the foundation to charity.

Suppose that a foundation has assets of A = $20,000, and pays τ_f = 2% on earnings on investments (the current tax rate on foundation earnings). If one also supposes the average rate of return on earnings is r = 8%, then foundation earnings, after taxes, are $20,000*0.08*(1-0.02) = $1568. Continuing the numerical example, a gift to the corporate foundation of $40,000 is again offset by a tax deduction of $13,600. The corporate cost of giving $40,000 to charity is:

$$(1 - \tau_C)G_D - [(Ar(1 - \tau_F)]$$

$$= (1 - 0.34)^* 40,000 - [(20,000)^* 0.08^* (1 - 0.02)] = \$24,832$$

In this simple case, it is less expensive for the firm to donate through a foundation than directly, because earnings on the assets of the foundation add to the pool of funds available for corporate giving. Note, however, that the corporation could invest a sum of funds to be used for corporate giving. The after-tax corporate earnings on contributions investments should be measured against the foundation's return on assets which are used to make donations.

Extending the Model

Firms which have corporate foundations tend to make some donations directly to charity and some through the corporate foundation. Corporate gifts often include company products and services, and company property, in addition to cash. Contributions to charitable organizations outside the United States are also made by corporations and foundations. This model considers only gifts made directly to

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[9]In a sample of 292 Fortune Double 500 firms over the period 1984–1988, less than 5% reported contributions in excess of 2% of taxable income in any year [Webb (1992, p. 214)]. In fact, in only three instances (of the 292 firms over five years) did firms report contributions exceeding 10% of taxable income. In those instances, firms likely applied the excess contributions against taxable income in another year. Additionally, firms may donate money and call the gift a business expense (sponsorship, advertisement, etc.). Because the 10% is almost never an issue, it has not been incorporated in the theoretical model used here.

charities (either cash or the deductible value of in-kind gifts) and gifts to the foundation of cash or assets made specifically with the intent of funding the foundation. The model considers overseas gifts made only by the company foundation (overseas gifts made directly are not tax deductible, and do not show up in the model). A discussion of other types of gifts follows the model.

How Corporate Contributions Enter the Model

Corporate contributions have been modeled in the economics literature as an input to a profit-maximizing firm's optimization process.[10] This model adds two important aspects of corporate contributions. First, corporate gifts are divided between those given directly to charity, and those given to the corporate foundation. Second, contributions expenditures are treated as a kind of capital investment. The effect of contributions on present conditions of the firm depends upon its past history of contributions, and the rate at which its store of goodwill from charitable contributions declines.[11] Using a profit-maximization scenario, the model captures the effect of corporate contributions on a firm's goodwill levels. The model spans two time periods for n firms and is linear in corporate goodwill and quadratic in profits. This noncooperative model satisfies the conditions for an interior Nash equilibrium.

The Demand Structure and Cost of Production

The model assumes that firms choose output and the amount of contributions expenditures needed to maintain certain levels of goodwill. There are n firms. It is assumed that the output level may be freely set for each time period but is not alterable within the period. Output price is easily manipulated within the time period. In this way, the firm may set price and output, and may adjust price during the current period so that sales over the time period are equal to production.

Goodwill and the Cost of Contributions

Several assumptions about goodwill are needed. First, contributions improve the image of the firm in the eyes of potential and current customers, as well as employees of the firm, and makes them more likely to buy the firm's products or want to work for the company. (Similarly, contributions may increase the likelihood that creditors and regulators make decisions which are in the interest of the corporation's business operations.)

The firm possesses stocks of goodwill in the output and factor markets in the first period, which are a function of the amount of gifts made in the first period. Current contributions are assumed to have an effect both in the current period and into the future. Over time, the stocks of goodwill would diminish to zero if no further expenditures were made to charitable organizations. Larger contributions

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[10] See, for example, Navarro (1988a), Clotfelter (1985), Maddox/McElroy and Siegfried (1981a, 1981b, 1982), Whitehead (1976), Nelson (1970), Schwartz (1968), and Johnson (1966).

[11] This model incorporates ideas from James Friedman's (1983) paper.

expenditures are assumed to increase the stock of goodwill in the current period. Finally, larger stocks of goodwill from the first period are assumed to result in a larger stocks of goodwill in the second period.[12] In this paper, effects of contributions made by other firms are not examined.[13]

A Theoretical Model of Charitable Giving

For each firm, where t refers to the time period:

p_t = output price;
q_t = output or production level;
G_{Dt} = stock of goodwill from gifts made directly to charities;
G_{Ft} = stock of goodwill from gifts to charities via the foundation;
g_{Dt} = gifts made directly to charities;
g_{Ft} = gifts made by the foundation to charities;
τ_{Ct} = corporate tax rate;
Δ = discount rate for converting period 2 dollars to period 1 dollars;
δ_D = depreciation rate of the effect of direct gifts;
r_t = rate of return on investments;

and for the corporate foundation:

τ_{Ft} = tax rate on private foundations;
δ_F = depreciation rate of the effect of foundation gifts;
A_t = amount of foundation assets;
α_t = amount of foundation gifts made to non-U.S. charities;
θ_t = amount of earnings from sales of company stock or other assets that result in savings from capital gains taxes.

Long-run profits of the firm depend on the quantity of output and the stocks of goodwill. This model assumes that firms choose output and the levels of goodwill gained from direct and foundation giving in each period. Output and goodwill enter the inverse demand function for the firm directly:

$$p_t = p_t\left(Q_t\left(q_t, \sum_{i=2}^{n} q_{it}\right), G_{Dt}(g_{Dt}), G_{Ft}(g_{Ft})\right)$$

where p_t is the output price a firm charges in period t, Q_t is total production by all firms in period t, and $G_{Dt}(g_{Dt})$ and $G_{Ft}(g_{Ft})$ are a firm's goodwill levels in period t, which are functions of the amounts of giving, g_{Dt}, g_{Ft} in period t.

Price is assumed to be negatively related to output

$$\frac{\partial p_t}{\partial Q_t} < 0$$

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[12] No attempt is made to examine inter-asset distortions, i.e., this dissertation does not comment on the mix of capital assets (goodwill vs. other types of capital) employed by the firm.

[13] For more on the effects of contributions made by other firms, see Webb and Farmer (March 1996).

and positively related to contributions

$$\frac{\partial p_t}{\partial g_{Dt}} > 0, \qquad \frac{\partial p_t}{\partial g_{Ft}} > 0.$$

The positive relationship between contributions and price is based on the positive effect contributions have on goodwill.

Costs are a function of the firm's own production (output) and contributions level chosen in each period:

$$c_t = c_t(q_t, G_{Dt}(g_{Dt}), G_{Ft}(g_{Ft})).$$

The firm is assumed to incur positive marginal costs of production:

$$\frac{\partial c_t}{\partial q_t} > 0$$

and enjoy a reduction in costs from the goodwill gained from contributions:

$$\frac{\partial c_t}{\partial G_{Dt}} < 0, \qquad \frac{\partial c_t}{\partial G_{Ft}} < 0.$$

The stock of goodwill generated from a gift made in period t is assumed to depreciate completely by the end of period $t + 1$. Goodwill increases from expenditures on contributions, but exhibits diminishing marginal returns. (The natural logarithmic form is used to capture the effect of diminishing marginal returns on corporate goodwill from additional contributions expenditures.) It is also assumed that the initial stocks of goodwill from contributions are zero, or $G_{D0} = G_{F0} = 0$. If the depreciation rate of goodwill from direct contributions is δ_D, then the stock of goodwill from direct giving for firm I in period t may be written:[14]

$$G_{Dt} = (1 - \delta_D)G_{D,t-1} + \ln(g_{Dt}).$$

A more difficult relationship exists between corporate goodwill from foundation giving and foundation gifts to charities. In the simplest case, one may assume that the foundation acts as a pass-through vehicle for gifts. That is, corporate gifts to the foundation equal the foundation gifts to charities. In this case, the stock of corporate goodwill from foundation giving is:

$$G_{Ft} = (1 - \delta_F)G_{F,t-1} + \ln(g_{Ft}).$$

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[14] It is assumed that giving is greater than 1, so that the natural logs of giving are greater than or equal to zero.

In the case where the amount the corporation gave to its foundation (g_{Ft}) differs from the amount the foundation gave to charity (FG_t) in time period t, the stock of goodwill from foundation giving is:

$$G_{Ft} = (1 - \delta_F)G_{F,t-1} + \ln(FG_t).$$

The amount of goodwill results from the residual goodwill from last period's giving, plus the amount of foundation gifts made in the current period. For simplicity, the analysis which follows assumes a pass-through relationship.

The profit function for the firm in period 1, not including financial effects of the corporate foundation, may be expressed:

$$\pi_1 = (1 - \tau_{C1})[(p_1 - c_1) - G_{D1} - G_{F1} + r_1 G_{D1}]$$

which says that profits in period 1, after taxes, are equal to sales revenues less the costs of giving, plus the return on investments set aside to give in donations at year end. (The mathematical details of the model are presented in the Appendix.) Substituting in for G_{D1} and G_{F1} results in:

$$\pi_1 = (1 - \tau_{C1})[(p_1 - c_1) - [(1 - \delta_D)G_{D0} + \ln(g_{D1})]$$

$$- [(1 - \delta_F)G_{F0} + \ln(g_{F1})] + r_1 g_{D1}].$$

Because $G_{D0} = G_{F0} = 0$, the equation becomes:

$$\pi_1 = (1 - \tau_{C1})[(p_1 - c_1) - \ln(g_{D1}) - \ln(g_{F1}) + r_1 g_{D1}]. \tag{1}$$

To calculate the foundation's financial effects on the corporation, consider the following First, the foundation receives gifts from the company in the amount of g_{F1}. These gifts are added to last period's assets, A_0, and earn a return of $(g_{F1} + A_0)r_1$, where r_1 is the rate of return on investments in period t.

In addition, if the company chooses to donate to charities outside the United States, the charitable foundation may be used to make the donation. Because corporations cannot deduct gifts made outside the United States, the foundation saves the corporation the cost of the corporate marginal tax rate, τ_{C1} on the gift of amount α_1. This implies $(1 - \tau_{C1})\alpha_1$ in funds available for corporate giving through the foundation in excess of what would have been available if the corporation had made the gift directly to charity. Thus, $(1 - \tau_{C1})\alpha_1$ is the first period's savings from making the overseas donation through the foundation.

Finally, the company may make donations of company stock or other assets to the foundation which the foundation may sell to fund charitable activities. The foundation is not required to pay capital gains taxes on such sales: using the foundation saves the corporation some amount of after-tax earnings which would have been taxed away from the corporation's income under capital gains laws. If θ_1 represents the amount of earnings on capital gains avoided, $(1 - \tau_{C1})\theta_1$ represents the after-tax savings of selling the asset through the foundation. Thus, foundation assets (funds which may be donated or invested) rise by $(1 - \tau_{C1})\theta_1$.

Combining these effects results in an equation representing savings or costs of using the corporate foundation:

$$(1 - \tau_{F1})[[A_0 + g_{F1} + (\alpha_1 + \theta_1)(1 - \tau_{C1})]r_1 - g_{F1}] \tag{2}$$

where

$$(1 - \tau_{F1})[A_0 + g_{F1} + (\alpha_1 + \theta_1)(1 - \tau_{C1})]r_1 \tag{2a}$$

represents the foundation's after-tax earnings on investments made with foundation assets, gifts received from the corporation, and funds generated from the corporate tax savings on sales of gifts of property or stock, and gifts made overseas through the foundation. The after-tax cost to the foundation of making (pass-through) donations during period t is $(1 - \tau_{F1})(-g_{F1})$. The magnitudes of equation (2a) and the foundation tax rate determine whether it is less expensive to make donations through the firm or directly.

Combining the profit function equation (1) with equation (2) results in the following total profit function, capturing the financial effects of giving directly and through the foundation:

$$\pi_1 = (1 - \tau_{C1})[(p_1 - c_1) - \ln(g_{D1}) - \ln(g_{F1}) + r_1 g_{D1}]$$

$$+ (1 - \tau_{F1})[A_0 + g_{F1} + (\alpha_1 + \theta_1)(1 - \tau_{C1})r_1] - g_{F1}. \tag{3}$$

What can be determined from this function? By expanding the function to capture two time periods, the effects of changes in corporate and foundation tax rates may be predicted. In addition, the effects of making contributions in the current period versus future periods may be analyzed. The Appendix shows first-order conditions, and resulting optimal equations for the firm's choice variables, $q_1, q_2, g_{D1}, g_{D2}, g_{F1}, g_{F2}$. A summary of the comparative statics results of changes of the tax rates, amounts of gifts made overseas, and amounts of capital gains tax savings achieved on the choice variables is presented in Table 3 (Effects of Changes in Giving on Output) and Table 4 (Effects of Changes in Tax Rates, Output, and Non-Deductible Giving on Gifts).

The effects of increased giving in period 1, g_{D1}, have a positive effect on period 1 output, q_1. Additionally, giving in periods 1 and 2, $g_{D1}, g_{D2}, g_{F1}, g_{F2}$, have positive effects on period 2 output, q_2. These results are expected because the amount of giving positively affects the goodwill levels associated with increasing demand and lowering production costs. Due to the longer-term effects of gifts (the

Table 3. Effects of Changes in Giving on Output

A positive change in:	Affects Output Year 1	Affects Output Year 2
Direct G year 1	+	+
Direct G year 2	0	+
Found G year 1	+	+
Found G year 2	0	+

Table 4. Effects of Changes in Tax Rates, Output, and Non-Deductible Giving on Gifts

A positive change in:	Affects Direct Giving Year 1:	Affects Direct Giving Year 2:	Affects Found Giving Year 1:	Affects Found Giving Year 2:
Corp tax yr 1	+	0	?	0
Corp tax yr 2	–	0	–	?
Fnd tax yr 1	0	0	–	0
Fnd tax yr 2	0	0	0	–
Output yr 1	+	0	+	0
Output yr 2	+	+	+	?
Overseas gifts	0	0	+	?
Capital gains	0	0	+	?

depreciation of the stock of goodwill over time), period 1 giving affects period 2 profits.

Table 4 shows that corporate direct giving in period 1, g_{D1}, is positively affected by an increase in the corporate tax rate in period 1, τ_{C1}. When the corporate marginal tax rate is higher, firms donate more to take advantage of the lower cost (the complement of the marginal tax rate) of giving. Similarly, corporate direct giving in period 1 is inversely related to an increase in the corporate tax rate in period 2, τ_{C2}. If the tax rate in period 2 is expected to rise, firms put off donations until the next year in order to take advantage of the lower cost of giving.

The foundation tax rates, τ_{Ft}, and the amount of gifts made to the foundation in the form of overseas donations or property, α_t, θ_t, have no effect on current direct giving (their effects are captured by examining foundation giving). Increases in output in the first or second period, q_1, q_2, are associated with increases in direct giving in the current period, g_{D1}. Very likely, increased output leads to increased revenues, greater taxable income and, thus, more capability to give and higher taxable income.

Direct giving in the second (terminal) period, g_{D2}, is positively related to output in the second period. It is not related to any other variable in this analysis because period 2 is defined as the final period in the model.

Foundation giving is a more complicated issue. Remember from the set up of the model that foundation gifts represent both the amount the corporation gives to its foundation, and the amount given out from the foundation at year end (a pass-through scenario). Thus, the expected relationships between variables are difficult to predict.

Foundation giving in the first period, g_{F1}, is negatively related to an increase in the foundation tax rate, τ_{F1}. This is as expected because an increase in the foundation tax rate increases the cost to the corporation of giving through the foundation. Output in both periods is positively related to foundation giving, possibly again reflecting the corporation's ability to give and its higher taxable income.

Gifts which result in capital gains savings, θ_1, or tax savings from gifts made to overseas charities, α_1, are positively related to foundation giving. This makes intuitive sense, because the greater the advantages of making these types of gifts, the more likely it is that foundation giving will rise, both in terms of gifts made from the corporation and those made by the foundation to charities. The corporate

tax rate in period 1, τ_{C1}, has an uncertain effect on foundation giving in the first period. The corporate tax rate in period 2, τ_{C2}, has a negative effect on foundation giving in period 1, which may reflect the fact that some gifts from the corporation to the foundation were delayed until the second period, when the value of the tax deduction was increased.

Effects on foundation giving in the second period are generally ambiguous. Primarily because the second period is the terminal period, it is unclear whether a firm continued to be affected by changes in tax rates, output, and type of giving. The only clear sign derived is that the foundation tax rate in the second period, τ_{F2}, and second period foundation giving, g_{F2}, are inversely related. This is, again, as expected because an increase in the foundation tax rate increases the cost to the corporation of giving through the foundation.

IV. Implications of the Model

The model shows that profitability issues play a large role in determining corporate executives' choices to use direct or foundation giving programs for various types of gifts. The model implies that the corporate and foundation tax rates may be altered to change the timing and, to some degree, the means for corporate giving. As in previous models, firms take advantage of the effective government subsidy on contributions. The firm's cost of making a dollar of contributions is the complement of the marginal tax rate; the government contributes the marginal tax rate. Tax deductibility rules on overseas giving, the limit on corporate direct giving (10% of taxable income), and foundation exemption from capital gains taxes on the sale of donated company assets, play principal roles in the choices executives make about how to best fund the corporate giving program. In addition, foundation assets and the regulations on foundation earnings and payouts affect executives' choices about foundation giving. The following paragraphs discuss consequences of specific policies.

Changing the corporate marginal tax rate can alter the timing and, for some period of time, the amounts of corporate gifts. Suppose, for example, the current marginal tax rate is expected to fall. If the fall is perceived as being temporary, one expects firms to donate more before the fall to take advantage of the lower cost of giving. This trend has been supported both by Webb (1992) and in *The Chronicle of Philanthropy* (Nov. 1, 1995). A longer-term or permanent change in the corporate tax rate [as Clotfelter (1985) and others have noted], affects the amount of donations made around the year of the change, but is not likely to change the level of giving significantly over time.

Policies on foundation taxes may affect giving; raising the rate which foundations pay decreases foundation giving because it raises the cost to the corporation of making the gift. Although it is unlikely that a change in the tax rate significantly affects the total amount given, it may alter the choice of vehicle (foundation or direct giving program) used to make the donation. Changes in tax rates may also affect the likelihood that firms establish company-sponsored foundations. Policymakers wishing to encourage the use of corporate foundations can do so by decreasing taxes on returns on corporate foundation assets.

An important policy issue for charitable giving is whether changes in tax rates on either the corporation or foundation have adverse effects on foundation or direct giving programs, respectively. The model shows an increase in the current

corporate tax rate has an uncertain effect on current foundation giving. However, the model suggests an expected increase in the corporate tax rate negatively affects current foundation giving, reflecting the fact that some gifts from the corporation to the foundation will be delayed until the future when the value of the tax deduction increases. The long-term cross-effects of changes in tax rates must be examined in future research to determine their effects on vehicle and amount of corporate giving.

How does the capital gains exemption for foundations affect gifts of company product or property? Gifts of assets result in a net return which is higher for a nonprofit organization than a corporation; the exemption from capital gains taxes on the return from the sale, and the lower foundation tax rate affect the value of the gift. Without the exemption, corporate executives have no incentive to fund giving programs by donating company product or property. Current tax law provides the opportunity for executives to discard property and save taxes while funding a charitable giving program. Policies allowing capital gains exemptions increase the attractiveness of foundation use.

Tax laws on international gifts may affect the vehicle and types of gifts made by corporations. Multinational firms may not deduct the cost of gifts made to non-U.S. charities. Because U.S. tax law permits giving through an organized private foundation within the United States, firms wishing to donate to nonprofit organizations operating overseas may give the money to the corporate foundation. The firm then benefits by claiming a tax deduction (because the donation is made in the United States) and the foundation may give the money directly to the overseas charity. If U.S. policymakers wish to curb corporate deductions for grants made to overseas organizations, they could restrict corporate foundation gifts.[15]

Another policy question is, what is the effect of the tax deduction limiting the firm's annual deduction to 10% of taxable income? In reality, the limitation rarely matters; extremely few firms come close to donating 10%. One expects that because firms generally donate only 1%–2% of taxable income, and because they may use the carry-forward provision to deduct excess gifts in other years, changing the 10% limitation will likely have no effect on corporate giving. A possible (though not likely significant) outcome of a different limitation is that it may affect public perception of corporate giving, which may change the amount firms donate.

One avenue for policymakers who wish to affect types of corporate giving is to change the limits on deductibility for gifts of company products. Currently, the value of a deduction for gifts of product is production cost, unless the gift fits a very specific set of conditions. (Gifts made to enhance specific technology or to assist infants, the infirm or the needy, are deductible at a cost between production cost and sales value.) A policy encouraging donation of some desirable types of gifts (such as computers) would allow deduction at higher than production cost.

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[15] Examples of international gifts are easy to find; how the gifts were made is not. For example, AT & T regularly announces gifts made overseas. A cursory search of the Internet provides the following example: "For release Monday, June 21, 1993. AT & T donates million-dollar lab to University of Athens." The release notes that a million dollars' worth of "state-of-the-art laboratory equipment" was donated to National Technical University of Athens. The equipment had previously been used at AT & T Bell Laboratories, Holmdel, N.J. Whether the gift was made to the AT & T Foundation, and then to the University, or whether it was made via AT & T Network Systems International BV in Europe is not stated in the release.

In sum, tax rates and policies both on corporate giving and foundations affect the amount, timing, and types of corporate gifts. Policymakers wishing to change corporate charitable giving must be aware of the differences in the treatment of various types of gifts. Although simplified, the model presented in this paper highlights some of the differences in foundation and direct giving, and the effects of changes in tax policies on these gifts. The following paragraph discusses some of the simplifications of the model.

Relaxing several assumptions of the model would result in a more realistic (but mathematically difficult) model. The biggest challenge to the modeling process is incorporating the fact that not all donations pass through the foundation. (The Foundation Center (1994, p. 38) has reported 680 corporate foundations (36%) hold at least $1 million in assets.) Costs of the direct and foundation giving programs may differ; their inclusion further complicates the model. Overseas giving from the corporation is not deductible, but is likely done (at least on occasion) by corporations. Implementation of this fact may require an additional cost variable, or some measure capturing how gifts are made in other ways (through advertising or other business expenditures). Similarly, in the event that the corporation gives assets to the foundation which are not sold, the cash value of the assets, and the return on the assets complicate the foundation's earnings. Finally, because corporate foundations rarely cease to exist, the model would be more realistic if developed for an infinite time horizon. However, the mathematics of these additions are quite challenging, and may add little to the practical knowledge gained by examining this simplified model.

V. Summary

This paper presents a new theoretical model of corporate giving, and examines the financial implications of making different types of gifts. The model shows that corporate and foundation tax rates, the occurrence of donations to non-tax-deductible charities, the sales of assets to fund corporate foundations, and the effects of contributions over time, affect the cost of corporate giving and, thus, corporate net income. Comparative statics from a two-period model provide theoretical motivations for making certain types of gifts in certain ways. The results show that tax deductibility of some types of gifts, variability between corporate and foundation tax rates, amounts of gifts made overseas, and capital gains allowances for the corporate foundation all play a role in determining how gifts are made. Even though foundations must pay a small tax on earnings and face separate filing requirements, use of a nonprofit foundation for making contributions often results in a subsidization of monies to be distributed for charitable purposes. Though the intent is surely honorable, the effects of such advantages provide some firms with tax advantages and, hence, more after-tax income, as a reward for making donations to charity through a corporate foundation.

Appendix: Definition of Variables

For each firm, where t refers to the time period:

p_t = output price;
q_t = output or production level;

G_{Dt} = stock of goodwill from gifts made directly to charities;
G_{Ft} = stock of goodwill from gifts made to the company foundation;
g_{Dt} = gifts made directly to charities;
g_{Ft} = gifts made by the foundation to charities;
τ_{Ct} = corporate tax rate;
Δ = discount rate for converting period 2 dollars to period 1 dollars;
δ_D = depreciation rate of the effect of direct gifts;
r_t = rate of return on investments;

and for the corporate foundation:

τ_{Ft} = tax rate on private foundations;
δ_F = depreciation rate of the effect of foundation gifts;
A_t = amount of foundation assets;
α = amount of foundation gifts made to non-U.S. charities;
θ = amount of earnings from sales of company stock or other assets which result in savings from capital gains taxes.

Long-run profits of the firm depend on the quantity of output and the stocks of goodwill. The output price firm 1 charges is determined by firm 1's choice of output, all the other firms' choices of output, and the stocks of goodwill chosen by each firm. A portion of the stock of goodwill, γ, $0 \leq \gamma \leq 1$, increases demand in the output market, and the remainder, $(1 - \gamma)$, decreases costs. Using a linear form, the inverse demand and (per-unit) cost functions for a firm in period 1 may be expressed as follows:

$$p_1 = u_0 - \frac{\lambda}{2}q_1 - \sum_{i=2}^{n} q_{i1} + \gamma(G_{D1} + G_{F1})$$

and

$$c_1 = v_0 + \frac{(1 - \lambda)}{2}q_1 - (1 - \gamma)(G_{D1} - G_{F1})$$

where the following conventions are used: $u = u_0 + v_0$, which simplifies the constant term in the profit function, and $\lambda/2$ and $(1 - \lambda)/2$ are used to simplify the coefficients on q_1. (The coefficients on q_1 in the first-order conditions simplify to 1 when this convention is used. λ is a constant.)

The cost of the expenditure on contributions made directly is assumed to be equal to the level of goodwill from direct contributions, G_{Dt}, which is not a per-unit cost. The same holds true for the cost of expenditures for contributions made to the company foundation. Therefore, after-tax profits in period 1 for a firm facing tax rate τ_{C1} may be expressed as follows:

$$\pi_1 = (1 - \tau_{C1})[(p_1 - c_1) - G_{D1} - G_{F1} + r_1 G_{D1}]$$

Substituting in for p_1 and c_1:

$$\pi_1 = (1 - \tau_{C1})\left[\left(u_0 - \frac{\lambda}{2}q_1 - \sum_{i=2}^{n} q_{it} + \gamma(G_{D1} + G_{F1})\right)q_1\right.$$

$$\left. - \left[v_0 + \frac{(1 - \lambda)}{2}q_1 - (1 - \gamma)(G_{D1} + G_{F1})q_1 - G_{D1} - G_{F1} + r_1 G_{D1}\right]\right]$$

$$= (1 - \tau_{C1})\left[\left(u - q_1 - \sum_{i=2}^{n} q_{it} + (G_{D1} + G_{F1})\right)q_1 - G_{D1} - G_{F1} + r_1 G_{D1}\right]$$

$$= (1 - \tau_{C1})\left[\left(u_0 - v_0 - \frac{\lambda}{2}q_1 - \frac{(1 - \lambda)}{2}q_1 - \sum_{i=2}^{n} q_{it} + \gamma(G_{D1} + G_{F1})\right)\right.$$

$$\left. + (1 - \gamma)(G_{D1} + G_{F1})q_1 - G_{D1} - G_{F1} + r_1 G_{D1}\right].$$

Thus, profit for a firm for both periods may be expressed:

$$\pi = (1 - \tau_{C1})\left[\left(u - q_1 - \sum_{i=2}^{n} q_{i1}(G_{D1} + G_{F1})q_1 - G_{D1} - G_{F1} + r_1 G_{D1}\right)\right]$$

$$+ \Delta(1 - \tau_{C2})\left[\left(u - q_2 - \sum_{i=2}^{n} q_{i2} + (G_{D2} + G_{F2})q_2\right.\right.$$

$$\left.\left. - (G_{D2} + G_{f2}) + r_2 G_{D2}\right].$$

Similar expressions result for all other firms. As a final step, substituting in for G_{Dt}, G_{Ft} results in the following profit equation for the firm:

$$\pi = (1 - \tau_{C1})\left[\left(u - q_1 - \sum_{i=2}^{n} q_{i1} + \ln(g_{D1}) + \ln(g_{F1})\right)q_1 - g_{D1} - g_{F1} + r_1 g_{D1}\right]$$

$$+ (1 - \tau_{F1})[(A_0 + g_{F1} + (\alpha_1 + \theta_1)(1 - \tau_{C1})g_{F1})r_1 - g_{F1}]$$

$$+ \Delta\left[(1 - \tau_{C2})\left[\left(u - q_2 - \sum_{i=2}^{n} q_{i2} + \ln(g_{D2})\right.\right.\right.$$

$$\left.\left. + (1 - \delta_D)\ln(g_{D1}) + \ln(g_{F2}) + (1 - \delta_F)\ln(g_{F1})\right)q_2 - g_{D2} - g_{F2} + r_2 g_{D2}\right]$$

$$\left. + (1 - \tau_{F2})[(A_1 + g_{F2} + (\alpha_2 + \theta_2)(1 - \tau_{C2})g_{F2})r_2 - g_{F2}]\right].$$

Six first-order conditions are:

$$\frac{\partial \pi}{\partial q_1} = (1 - \tau_{C1})\left[u - 2q_1 - \sum_{i=2}^{n} q_{i1} + \ln(g_{D1}) + \ln(g_{F1})\right] = 0;$$

$$\frac{\partial \pi}{\partial q_2} = (1 - \tau_{C2})\left[u - 2q_2 - \sum_{i=2}^{n} q_{21} + \ln(g_{D2}) + (1 - \delta_D)\ln(g_{D1})\right.$$

$$\left. + \ln(g_{F2}) + (1 - \delta_F)\ln(g_{F1})\right] = 0;$$

$$\frac{\partial \pi}{\partial g_{D1}} = (1 - \tau_{C1})\left[\frac{q_1}{g_{D1}} - 1 + r_1\right] + \Delta(1 - \tau_{C2})\left[\frac{q_2(1 - \delta_D)}{g_{D1}}\right] = 0;$$

$$\frac{\partial \pi}{\partial g_{D2}} = \Delta(1 - \tau_{C2})\left[\frac{q_2}{g_{D2}} - 1 + r_2\right] = 0;$$

$$\frac{\partial \pi}{\partial g_{F1}} = (1 - \tau_{C1})\left[\frac{q_1}{g_{F1}} - 1\right] + (1 - \tau_{F1})[(1 + (\alpha_1 + \theta_1)(1 - \tau_{C1}))r_1 - 1]$$

$$+ \Delta\left[(1 - \tau_{C2})\left[\frac{q_2(1 - \delta_F)}{g_{F1}}\right]\right] = 0;$$

$$\frac{\partial \pi}{\partial g_{F2}} = \Delta\left[(1 - \tau_{C2})\left[\frac{q_2}{g_{F2}} - 1\right] + (1 - \tau_{F2})\right.$$

$$\left. \times [(1 + (\alpha_2 + \theta_2)(1 - \tau_{C2}))r_2 - 1]\right] = 0.$$

From these six equations, six optimal conditions result:

$$q_1^* = \frac{1}{2}\left[u - \sum_{i=2}^{n} q_{i1} + \ln(g_{D1}) + \ln(g_{F1})\right] \tag{1}$$

$$q_2^* = \frac{1}{2}\left[u - \sum_{i=2}^{n} q_{21} + \ln(g_{D2}) + (1 - \delta_D)\ln(g_{D1})\right.$$

$$\left. + \ln(g_{F2}) + (1 - \delta_F)\ln(g_{F1})\right] \tag{2}$$

$$g_{D1}^* = \frac{1}{(1 - r_1)}\left[q_1 + \frac{\Delta(1 - \tau_{C2})(1 - \delta_D)q_2}{(1 - \tau_{C1})}\right] \tag{3}$$

$$g_{D2}^* = \frac{q_2}{(1 - r_2)} \tag{4}$$

$$g_{F1}^* = \frac{-(1 - \tau_{C1})q_1 - \Delta(1 - \tau_{C2})(1 - \delta_F)q_2}{(1 - \tau_{F1})[(1 + (\alpha_1 + \theta_1)(1 - \tau_{C1}))r_1 - 1] - (1 - \tau_{C1})} \tag{5}$$

$$g_{F2}^* = \frac{(1 - \tau_{C2})q_2}{-(1 - \tau_{F2})[(1 + (\alpha_2 + \theta_2)(1 - \tau_{C2}))r_1 - 1] + (1 - \tau_{C2})} \tag{6}$$

Equations (1) and (2) may be broken down into components of marginal cost and marginal revenue using the price and cost functions developed at the beginning of the Appendix. They show that goodwill affects both marginal cost and marginal revenue. Equations (3) through (6) show that the optimal levels of giving in each period are determined by equating the marginal costs of the expenditures to the marginal revenue of making the expenditures. Detailed calculations or explanations of these conditions, and comparative statics results and calculations are available from the author upon request.

References

Baumol, W. J. (1970). Enlightened self-interest and corporation philanthropy. In *Foundations, Private Giving, and Public Policy*. The Commission on Foundations and Private Philanthropy. Chicago: University of Chicago Press, pp. 262–277.

Bennett, J. T. and Johnson, M. H. (June 1980). Corporate contributions: Some additional considerations. *Public Choice* 35(2):137–143.

The Chronicle of Philanthropy. (Nov. 1, 1995). Washington, DC: The Chronicle of Philosophy.

Clotfelter, C. T. (1985). *Federal Tax Policy and Charitable Giving*. Chicago: University of Chicago Press.

Corporation gifts to charities. (1935). *Social Service Review* 9:540–545.

Council for Aid to Education. (1994). *Survey of Corporate Contributions*. New York: Council for Aid to Education.

Diebold, J. (1982). *The Role of Business in Society*. New York: AMACOM.

The Foundation Center. (1994). *Foundation Giving: Yearbook of Facts and Figures on Private, Corporate and Community Foundations*. New York: The Foundation Center.

The Foundation Center. (1960–1970). *The Foundation Directory*. New York: Russell Sage Foundation.

The Foundation Center. (1971–1994). *The Foundation Directory*. New York: The Foundation Center.

Friedman, J. W. (1983). Advertising and oligopolistic equilibrium. *Bell Journal of Economics* 6:464–473.

Friedman, J. W. (1971). A non-cooperative equilibrium for supergames. *Review of Economic Studies* 28:1–12.

Friedman, J. W. (1977). *Oligopoly and the Theory of Games*. Amsterdam: North-Holland Publishers.

Galaskiewicz, J. (1985). *Social Organization of an Urban Grants Economy*. Orlando, FL: Academic Press, Inc. Harcourt Brace Jovanovich Publishers.

Galaskiewicz, J. (1991). A longitudinal analysis of corporate contributions in Minneapolis-St. Paul. Working Draft, University of Minnesota, Prepared for the March 1991 Spring Research Forum "Leadership and Management."

Goldberg, M. (1979). Incentives and compensation of corporate managers: An application to charitable contributions. Working paper. Chicago: University of Chicago.

Green, E. and Porter, R. (1984). Noncooperative collusion under imperfect price informa-
tion. *Econometrica* 52:87–100.

Hansmann, H. (1987). Economic theories of nonprofit organization. In *The Nonprofit Sector:
A Research Handbook* (W. W. Powell, ed). New Haven, CT: Yale University.

The Human Side of Corporate Competitiveness. (1990). Newbury Park, CA: Sage Publications.

Johnson, O. (1966). Corporate philanthropy: An analysis of corporate contributions. *Journal
of Business* 39:489–504.

Maddox, K. E. and Siegfried, J. J. (1981a). The effect of economic structure on corporate
philanthropy. Reprinted from *The Economics of Firm Size, Market Structure and Social
Performance,* pp. 202–225. Proceedings of a conference sponsored by the National
Bureau of Economics, NBER. Cambridge, MA: National Bureau of Economic Research.

Maddox McElroy, K. and Siegfried, J. J. (1981b). Corporate philanthropy in the U.S.: 1980.
Working Paper No. 81–W26. Vanderbilt University.

Maddox McElroy, K. and Siegfried, J. J. (1982). The effect of firm size on corporate
philanthropy. Working Paper No. 82–W02. Vanderbilt University.

Navarro, P. (1988a). Why do corporations give to charity? *Journal of Business.* 61:65–93.

Navarro, P. (1988b). The income elasticity of corporate contributions. *Quarterly Review of
Economics and Business* 28:66–75.

Nelson, R. L. (1970). *Economic Factors in the Growth of Corporate Giving.* New York:
National Bureau of Economic Research & Russell Sage Foundation.

Salamon, L. M. (1994). *America's Nonprofit Sector: A Primer.* New York: The Foundation
Center.

Schwartz, R. A. (1968). Corporate philanthropic contributions. *Journal of Finance* 22:
479–497.

Smith, H. (n.d.). To Have or Have Not... A Corporate Foundation. New York: Council for
Aid to Education.

Stotsky, J. (1991). The determinants of giving by corporate-sponsored foundations. Unpub-
lished manuscript. Washington, D.C.: U.S. Department of the Treasury.

Tirole, J. (1988). *The Theory of Industrial Organization.* Cambridge, MA: The MIT Press.

U.S. Code of Federal Regulations (26 CFR). (1988, 1994). Internal Revenue Code.

Webb, N. J. (1992). *Company Foundations and the Economics of Corporate Giving.* Ph.D.
dissertation, Duke University, Durham, NC.

Webb, N. J. (1994). Tax and government policy implications for corporate foundation giving.
Nonprofit and Voluntary Sector Quarterly 23:41–67.

Webb, N. J. and Farmer, A. (March 1996). Corporate goodwill: A game theoretic approach
to the effects of corporate charitable expenditures on firm behaviour. *Annals of Public
and Cooperative Economics* 67(1):29–50.

Whitehead, P. (1976). Some Economic Aspects of Corporate Giving. Ph.D. dissertation,
Virginia Polytechnic Institute and State University, Blacksburg, VA.

Williamson, O. E. (1967). *The Economics of Discretionary Behavior: Managerial Objectives in a
Theory of the Firm.* Englewood Cliffs, NJ: Prentice-Hall.