How Can a Ratings-based Method for Assessing Corporate Social Responsibility (CSR) Provide an Incentive to Firms Excluded from Socially Responsible Investment Indices to Invest in CSR?

Avshalom Madhala Adam
Tal Shavit

ABSTRACT. Socially Responsible Investment (SRI) indices play a major role in the stock markets. A connection between doing good and doing well in business is implied. Leading indices, such as the Domini Social Index and others, exemplify the movement toward investing in socially responsible corporations. However, the question remains: Does the ratings-based methodology for assessing corporate social responsibility (CSR) provide an incentive to firms excluded from SRI indices to invest in CSR? Not in its current format. The ratings-based methodology employed by SRI indices in their selection processes excludes many corporations by creating limited-membership lists. This received ratings-based structure is yet to offer an incentive for most of the excluded corporations to invest in improving their levels of CSR. We, therefore, ask under what circumstances a ratings-based method for assessing CSR could provide an incentive to firms excluded from SRI indices to invest in CSR. In this article, we attempt to offer a theoretical reply to this question. We show that when all firms are publicly ranked according to SRI index parameters, such indices can indeed create a market incentive for increased investment by firms in improving their performance in the area of social responsibility. We further show that this incentive tapers off as the amount of investment required exceeds a certain point or if the amount of payback on that investment fails to reach a certain threshold.

KEY WORDS: corporate social responsibility, social responsible investment, ethical investment, corporate social performance, financial performance, theory of SRI

''*In the long run, we believe the application of these standards helps to encourage greater corporate social responsibility and to align the investment process with the needs of society and the environment*'', http://www.domini.com

Introduction

The question we tackle in this article is: How can a ratings-based method for assessing corporate social responsibility (CSR) provide an incentive to firms excluded from socially responsible investment (SRI) indices to invest in CSR?

Our hypothesis is that the CSR ranking methodology currently used by SRI indices fails to encourage firms excluded from these indices to invest in CSR. Our proposed theoretical model of the effect that a firm's social responsibility rating (or lack thereof) has on firm utility illustrates this problem situation and offers a clue to its resolution. We propose a model, which is within the scope of CSR and SRI. The SRI indices are used to rank the CSR of a limited selection of traded businesses. Thus, for this limited group of firms, financial gains are linked directly to SRI in a traded firm. The literature on SRI connects the financial performance of the firm to its CSR. We examine an additional measure: the commitment of a firm to CSR regardless of financial gains (Cowton, 2004; Wood, 1991).

A recent survey of CSR theory covers: the relationship between a business and its larger environment; the attitudes of corporate upper-echelons toward CSR; the effects of board members' demographic and non-demographic characteristics on their inclination to support CSR strategy and policy; and the link between a firm's commitment to CSR and its financial performance (Ibrahim et al., 2003). The central focus of this article lies within the fourth dimension, theorizing on the possible link between

the incentive a firm has to obtain an SRI index rating and its willingness to invest in CSR. We note that the measurement systems used by SRI indices vary (the unit of analysis is in the micro level), as do the rating methods that they employ (the unit of analysis is in the macro level), and that both offer inconclusive results (Wartick, 2002). Most studies focus on the micro level (e.g. Hallerbach et al., 2004), that is, on how a firm's level of CSR is measured, an example being an examination of the weighting system used by the Domini Social Index (see below in section ''Measuring social responsibility: the methodology''). By contrast, at the macro level, a few studies focus on which firms are included or excluded from the indices. We expand on the latter, to which we turn now.

A review of current literature on SRI or ethical investing (EI) (within the macro level) reveals great and rapid changes in stock market investments (Cowton, 1999; Cox et al., 2004). SRI in firms, which are managed with a focus on CSR, has seen steady growth. For a firm to exhibit CSR, and to commit to internalizing the costs of negative externalities (e.g., of hazardous waste disposal) and to reducing their extent is no longer considered a heresy, but good management practice (Hawley and Williams, 2002).

Investment in the stocks of firms, which commit themselves to better environmental or social ends (i.e., CSR), as well as in the stocks of corporations, which adopt best practices (e.g., a Corporate Governance Code, CGC), has been growing steadily (Camejo, 2002). By way of illustration, several important indices, such as the Domini Social Index, the FTSE4Good, and DJSD indices, choose to screen out firms connected with specific industries, such as the tobacco industry and production of alcohol, and to include firms which commit to environmental or social actions. Thus, an investment trend that takes CSR and firm best practices seriously is underway and, contrary to ''market wisdom'', such investments perform well in the stock market over time, for example, the Domini Social Index outperformed the S&P 500 (Camejo, 2002).

According to Schuler and Cording (2006), consumers consider it important to know about the social actions of firms. A suggestion made by their proposed model, which links the corporate social performance of a firm to its financial performance, is

that information provided by external sources about the social performance of a firm will have a higher intensity impact on existing or potential consumers than will information provided by the firm itself. Their model also suggests that the greater the extent of information diffusion regarding a firm's social actions, the greater will be the intensity of its impact on these consumers.

Similarly, knowledge about the social performance of a firm is quite important to investors, individual and institutional alike. Institutional investment selection based on corporate social performance is quite significant in both the U.K. and the U.S. Institutional investors in the U.K. are subject to a set of regulatory, institutional and social pressures to encompass social performance in investment selection (Cox et al., 2004). In the U.S., SRI is no longer an option for institutional investors, but an imperative, argues Prakash Sethi (2005), since SRI decreases the long-term level of risk on the investment and concerns the long-term survival and growth of the firm. Given the sizes of the funds controlled by institutional investors, this fact impacts the structure of corporate ownership. The link between SRI and changing ownership structures is quite remarkable and, indeed, SRI has an impact on the conduct of businesses by the mere fact that the role it plays in the market leaves no room for real choice. Thus, SRI by institutional investors drives corporations to adopt a strategy of CSR in the market (Cox et al., 2004; Prakash Sethi, 2005; Solomon et al., 2002).

Furthermore, survey results indicate that the phenomenon of SRI positively affects investor attitudes toward socially responsible conduct by corporations (Fischhoff et al., 2001: 101), as well as affecting corporate performance and the improvement of corporate environmental reporting. Environmental reporting is, indeed, used in the market to analyze the conduct of a corporation and, in turn, to provide external impetus to improve performance (O'Rourke, 2003: 689). The merit of the reported data lies in them improving measurement credibility with respect to a firm's performance in the area of corporate responsibility, given that ''what gets measured gets managed'' (Dillenburg et al., 2003: 176).

We note that the trend toward SRI is constantly being evaluated through assessment of the

performance of SRI indices in comparison with the performance of other indices (O'Rourke, 2003: 68). As a result of this public exposure, SRI indices are in a position to influence investor decision-making. Yet, it is apparent that a little to no research attention has been directed toward investigating the effect such indices have on the firms excluded from them, and thus on the market's ability to encourage CSR among all firms. In this context, we examine the ratings-based methodology that some SRI indices use to assess the social responsibility of firms, and investigate whether, at the theoretical level, a modified (non-exclusionary) version of this method could be used to encourage all businesses to change their practices in the direction of increased corporate responsibility.

The structure of the article is as follows. Section ''Measuring social responsibility: the methodology'' consists of a brief survey of the methodology used by some SRI indices to measure CSR, EI and CGC. Section ''The effect of investing in social responsibility on firm behavior: theoretical model'' presents our theoretical model, which describes the effect of a ratings-based approach to measuring firm social responsibility on firm behavior in the realms of CSR and CGC. Section ''Conclusion'' of the article discuses the economic merits of firms investing in improving their social responsibility rating as revealed by our model.

Measuring social responsibility: the methodology

Here, we undertake a brief survey of the methodology used by some SRI indices to measure CSR, EI and CGC. In contradistinction with Friedman's view (i.e., that externalities should not be internalized), the triple bottom line measurement of business social responsibility includes environmental and social parameters in addition to financial considerations (Robins, 2006). Thus, the assessment of a profitable business may be contingent on the impact it attempts to make on all these parameters (Sparks and Cowton, 2004). Among the financial indices that have taken up this suggestion are the Domini 400 Social Index (limited to 400 companies), the FTSE4Good Index Series (covers the largest 50 or 100 companies appearing in the more-inclusive

FTSE4Good benchmark index), and the Dow Jones Sustainability Index (includes ∼200 companies, and aims to represent the top 10% of leading companies committed to sustainable practices). Thus, all these indices select a chosen group of business organizations, which commit themselves to socially responsible management more than do other businesses (Cowton, 2004: 249).

In order to illustrate the ranking methodology used with respect to business corporations, consider the Domini 400 Social Index, as measured by KLD Research (http://www.kld.com). KLD seeks to maintain the composition of the index at approximately 250 S&P companies, 100 non-S&P companies chosen for sector diversification and market capitalization, and 50 additional companies with exemplary social and environmental records. Its ranking method utilizes a number of exclusionary and qualitative social screens. The exclusionary screens eliminate companies involved in specific industries, namely: adult entertainment, alcohol, tobacco, firearms, gambling, nuclear power, and military weapons, from the index. Companies that do not meet KLD's financial screens (relating to market capitalization, earnings, liquidity, stock price, and debt to equity ratio) are also ineligible for inclusion in the index. The remaining companies are then evaluated (in the context of their industry and sector, as well as in relation to the broader market) with respect to a number of issues, each of which is assigned a different weight in determining the company's overall ranking. KLD assesses the following issues: Community Relations, Corporate Governance, Diversity, Employee Relations, Environment, Human rights and Product Quality and Safety. For each of the issues, KLD measures several positive parameters (strengths) and several negative parameters (concerns). For example, with respect to the Environment, the strengths are in the areas of: clean energy, beneficial products and services, pollution prevention, recycling, and others. The concerns are: hazardous waste, regulatory problems, ozone depleting chemicals, substantial emissions, agricultural chemicals, climate change, and others (http://www.kld.com).

Since, KLD maintains the list at 400 companies by adding a new company to the list only in order to replace a removal, and since it further maintains a specific compositional balance within the list, it is

clear that many socially and environmentally responsible companies may not make it to the list. Indeed, this is explicitly acknowledged by KLD, who note (in their FAQs sheet) that 'The DSI is not meant to be the 400 best companies nor is it the only 400 companies that meet social criteria'. However, the import of this statement (and the similar state of affairs that exists with respect to other tradable SRI lists) is that companies that fail to be included, for whatever reason, become more-or-less invisible to investors in terms of their CSR efforts.

The major goal of this article is to propose that, having failed to achieve any published ranking, it makes no difference, whether excluded companies perform little in the way of CSR or a lot. In either case, their efforts remain unknown and, therefore, can have little impact on investor decision-making. Thus, businesses excluded from SRI lists are left with no incentive, whatsoever to improve on their CSR, and thus the marketplace is deprived of growth with respect to the number of firms exhibiting CSR in the marketplace. Our proposition is based on our theoretical model, which gauges the effect of SRI on firm behavior,[1] and which is detailed in the next section.

The effect of investing in social responsibility on firm behavior: theoretical model

Assume U(Π, S) is the firm utility, where Π is the firm's profit and S is a firm's social responsibility rating, i.e., the number of points a firm has on a social responsibility index (higher points = higher rating). We assume that S designates the commitment of a firm to social responsibility beyond financial gains (Davis, 1973; Wood, 1991).

For simplicity, we define linear utility so that:

$$U(\Pi, S) = a\Pi + (1 - a)S, \quad 0 \leq a \leq 1, \quad (1)$$

where a and $1 - a$ are weighting factors for the firm's profit and for its social responsibility rating, respectively. If $a = 1$, the firm derives no utility from its social responsibility rating.

Since, social responsibility has a financial cost, we assume that S negatively affects firm profit Π. On the other hand, S positively affects company image and reputation. An increasingly positive image and reputation are mediator variables that positively af-

fect the financial performance of the firm (Orlitzky et al., 2003; Valor, 2005: 194).

For simplicity, we describe the profit function as follows:

$$\Pi = M + cS^2 - dS, \quad (2)$$

where M is the firm's profit, excluding the effect of its social responsibility rating.[2] Thus M relates to sales, production costs, research and development costs, etc.

The profit function takes into account both the negative effect of social responsibility on profit (because of the investment it requires from the firm; this is reflected in the scalar $-d$) and its positive effect on profit (due to its positive effects on image and reputation; these are reflected in the scalar $+c$) (Bromley, 2000). Figure 1 shows profit as a function of social responsibility rating.[3]

From equations (1) and (2) we obtain:

$$U(\Pi, S) = a(M + cS^2 - dS) + (1 - a)S, \quad 0 \leq a \leq 1. \quad (3)$$

Using the equation for marginal utility, we can derive the derivative of the social responsibility term, which then leads to the minimum utility[4]

$$\frac{\partial U}{\partial S} = 2acS - ad + 1 - a = 0. \quad (4)$$

Rearranging yields an equation for S:

$$S = \frac{ad + a - 1}{2ac} = \frac{d}{2c} - \frac{1 - a}{2ac}. \quad (5)$$

Next, we find the social responsibility (S) value at which the utility is greater than its value at $S = 0$ (no investment in social responsibility), which we term the 'balance point'
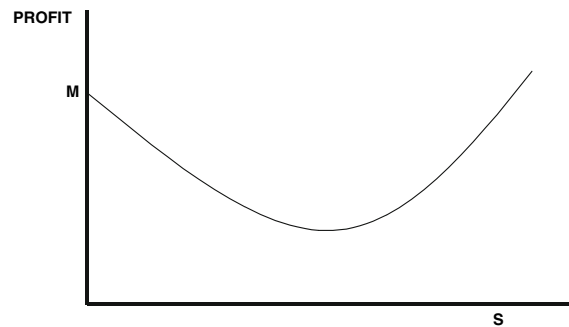

Figure 1. Effect of a firm's social responsibility rating (S) on its profit (Π).

$$U(\Pi, S) > U(\Pi, 0) \qquad (6)$$

or

$$a(M + cS^2 - dS) + (1 - a)S > aM \qquad (6.1)$$

which, on rearrangement, yields:

$$S > \frac{a + ad - 1}{ac} = \frac{d}{c} + \frac{1}{c} - \frac{1}{ac} = \text{balance point}$$
$$(6.2)$$

(for the mathematical calculations see Appendix 1).

Figure 2 shows the company's utility as a function of S. The figure also indicates the S of minimum utility and the balance point, mentioned in equations (5) and (6.2), respectively.

An increase in c (the positive effect of social responsibility on image and reputation) means an increase in the positive effect of S (the firm's social responsibility rating) on its profit and a decrease in the balance point. This, in turn, means that more companies will be willing to invest in social responsibility in order to increase their utility, since less investment in social responsibility is needed to maintain the firm's utility at the point where $S = 0$ (see equation (6.2)). By contrast, if c decreases, the reverse will hold true, with the result that fewer companies will be willing to invest in social responsibility.

By contrast, an increase in d (the negative effect of social responsibility on profit) or in a (the weighting factor for the profit component of a firm's utility) increases the balance point. Such an increase raises firm costs and lowers the utility a firm receives from investing in improving its social responsibility rating (S). Consequently, profit decreases and more

UTILITY

aM

Minimum = $\frac{d}{2c} - \frac{1-a}{2ac}$ Balance Point = $\frac{d}{c} + \frac{1}{c} - \frac{1}{ac}$ S
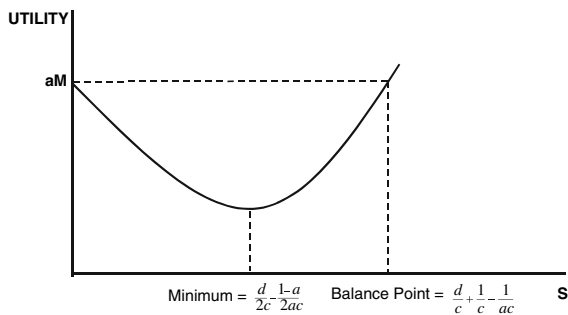
Figure 2. The utility function.

investment in social responsibility is needed to maintain the firm's utility at the point where $S = 0$.

Let's describe, at the macro level unit of analysis, two rating methods: a "partial rating" and a "full rating". The former method rates a select group of firms, an example being the Domini Social Index, while the latter method rates all firms in a given market. The positive effect of c on a firm in a partially rated market is lower that its effect on a firm in a fully rated market. This is because, in a fully rated market, the ranking of a firm affects its reputation and may increase its sales and so positively affect its profit Π. In a fully rated market, every firm would have an incentive to invest in social responsibility and to improve on its performance in that area. Yet, in the former case of a partially rated market, a firm excluded from the rated group has no incentive whatsoever to increase its investment in socially responsible behavior.

An indication of the magnitude of the barrier such investment funds place before unranked firms was described by O'Rourke, who asserts: "By promoting a particular fund as being socially, environmentally, and even financially responsible – this then begs the question as to why these criteria are not applied to all funds. By naming a fund as ethical and responsible – does it not imply that all the other funds are somehow unethical and irresponsible? (O'Rourke, 2003: 691)." For example, consider a firm that would have attained a ranking of 600 had it not been excluded from the Domini Social Index. Such a firm has no incentive to work towards a ranking of 450, because either ranking, be it 600 or 450, remains unknown to the public and so the improvement makes no impact on the firm's reputation. This prevents the firm from reaping benefits from its ranking and reduces its incentive to work towards improving its ranking. Yet a firm in a market, which is "fully rated" does have an incentive to change it's ranking, since an improvement from a ranking of 600 to 450 is known to the public and has an impact on the firm's reputation.

Conclusion

Earlier work on the measurement of SRI indices focused on issues concerning the parameters used to

formulate a rating. These parameters affect firms already included or close to inclusion within the indices. Our model elucidates the circumstances under which a ratings-based method for assessing CSR could offer an incentive to firms excluded from SRI indices to invest in CSR. We find that if all firms are publicly ranked according to SRI index parameters, then the investment a firm makes in improving its performance in the area of social responsibility generates a payoff in terms of improvements in the firm's public image and reputation, with consequent positive flow-on effects to profit. Thus, when all firms are ranked, market forces provide all firms with an incentive to invest in improving their SRI index ranking. We further find that this incentive tapers off as the amount of investment required for a firm to improve performance with respect to social responsibility exceeds a certain point or if the amount of utility a firm derives from its social responsibility rating fails to reach a certain threshold. However, none of these benefits accrue in a partially rated market, such as exists at present.

The model proposed here may be empirically tested in a market in which a corporate social index changes its rating methodology.

A possible shortcoming of the model is the existence of government regulations. By way of (extreme) example: if government were to fully subsidize CSR, then the balance point would be such as to render all ranking of socially responsible behavior irrelevant. However, so long as ranking methodologies continue to approximate those in current use, our model suggests that if all traded firms are ranked, then a firm's level of CSR, as measured by SRI index parameters, will impact its market performance.

Notes

[1] We refer to stock market traded companies, however, our proposed model may be relevant also to private companies.

[2] M represents the firm's profit when S equals zero, meaning the firm has no social responsibility rating.

[3] The figure shows that when S equals zero the firm's profit (Π) equals M.

[4] The result is the minimum utility since the second-degree derivative is positive ($2ac$).

Appendix 1: The balance point mathematical calculations

$$a(M + cS^2 - dS) + (1 - a)S > aM \qquad (6.1)$$

$$acS^2 - adS + (1 - a)S > 0 \qquad (6.1.1)$$

$$acS^2 + S(1 - a - ad) > 0 \qquad (6.1.2)$$

$$a * c * S > a + ad - 1 \qquad (6.1.3)$$

$$S > \frac{a + ad - 1}{ac} = \frac{d}{c} + \frac{1}{c} - \frac{1}{ac} = \text{balance point} \qquad (6.2)$$

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MBA Program,
The College of Management,
7 Rabin Ave, Rishon Le'Zion 75190, Israel
E-mail: avshalomadam@gmail.com