Performance of Nifty and ESG Index: A Relative Approach to Non-financial Reporting

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Abstract

This paper tries to compare the performance of NIFTY and ESG Index and examines if the reporting of non-financial information by the firms in ESG Index affects the performance of ESG Index as compared to NIFTY Index in the pre-crisis, crisis and post-crisis period. Comparison is done by combining both the indices and forming a new index for which performance has been measured for different time periods. The results show that NIFTY Index has performed better in pre-crisis period but ESG Index have performed better in crisis and post-crisis period.

Keywords: Non-financial information, Nifty Index, ESG Index, Price Growth

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1. Introduction

The value-relevance of non-financial information has increased significantly over the last several years. Most top executives at large multinational firms believe that non-financial performance measures are more valuable than traditional financial measures in assessing long-term value (PricewaterhouseCoopers, 2002). This shift in information preferences has stimulated a substantial increase in the volume of non-financial information conveyed by firms to their stakeholders and market participants.

The current mandated of financial reporting does not give a complete picture of a firm and is too short-term in orientation (Holder-Webb et al. 2008, 2009; Simnett et al. 2009a). In a world where the market value of the firm is decoupled from the value of its underlying assets, non-financial information offers a tool for measuring the firm value arising from intangibles and future cash flows that is missing from traditional financial reports (Lev 2001).

Given the limitations of historical financial information, an important question arises about what other information is of benefit to potential stakeholders. Holder-Webb et al. (2008,2009) studied the disclosure of corporate governance and corporate social responsibility but Cohen et al. (2011) found that retail investors were most concerned with non-financial disclosures that more directly affected future earnings such as the disclosure of leading economic indicators. In a recent review of developments on the integration of financial and non-financial information, Adams et al. (2011) argue that, "Integrated reporting is a means to providing a more coherent, balanced and complete picture of company performance, centered around strategic objectives and business models, and sensitive to the multiple drivers of value for today's businesses."

We can classify non-financial disclosures into two compartments namely economic and non-economic indicators. Economic indicators here mean the metrics, which directly, relates to performance of the business like market share, quality rankings, customer satisfaction, employee satisfaction, turnover and innovation among others. By non-economic indicators we mean those metrics, which are not directly related to the business of the reporting entity like expenditure on environment, CSR undertaken, expense on employees betterment among others. Firms are keeping their stakeholders informed about both the indicators. But with the growth in demand of responsibly produced and fairly traded goods the focus has shifted towards non-economic indicators.

Corporate social responsibility (CSR) activity is an area of intense and increasing interest both on the practice and academic fronts. Assets under professional management and invested with a social responsibility focus have also grown dramatically over the last ten years. Investors choosing social responsibility investment strategies require access to information not provided through traditional financial statements and analyses. At the same time, a group of mainstream institutional investors has encouraged a movement to incorporate environmental, social and governance information into equity analysis, and multi-stakeholder groups have supported enhanced business reporting on these issues.

Investors are not the only interested parties; CSR activity provides an increasing focus of product development and marketing practitioners. Research demonstrates that certain types of CSR activity produce value for firms in terms of brand loyalty and marketing advantages (Brown and Dacin 1997; Sen and Bhattacharya 2001). As Handleman and Arnold (1999, p. 36) note, "In any community, it is common to find retailers donating to local charities, sponsoring little league sports teams, and proudly displaying the national flag. These actions demonstrate the retailer's adherence to unwritten but powerful normative rules of acceptable social conduct, such as becoming involved with the community and promoting national pride."

According to the Social Investing Forum, "issues now occupying mainstream consciousness - corporate governance, transparency, accountability, and greater disclosure - have long been central to the practice of social investing." This means that the markets are recognizing such information and the firms reporting this information should get advantage over other firms that are not indulging and reporting such information.

In order to check whether reporting of such information is enhancing the performance or not, we have done an analysis, where we compare the performance of two groups of firms, one which are not indulging and reporting such activities and other group of firms which is considered as more socially responsible. Our analysis is based on the performance of Nifty and ESG Index. Nifty Index comprises of top 50 companies listed on National Stock Exchange (NSE) in term of their market capitalization and ESG (Environmental, Social and Governance) Index comprises of companies, which are more socially responsible towards their stakeholders and society at large. Comparison of performance for these two indices shall give us evidence, whether an index comprising of socially responsible companies is performing better than the index of other companies or being socially responsible doesn't serve any purpose. We expect the results of our analysis to indicate that the latter not an underperformer or in other words, that being socially responsible is not wasteful.

In the next section, we have reviewed some of the studies that throw light on non-financial reporting and how the need for being socially responsible has aroused. In the third section, we have presented our methodology for the performance measurement analysis where we have identified the breaks and then in the fourth section, we have fitted a regression equation for the calculation of growth rate for the complied index. In the last section, we have concluded the paper along with the major contribution and limitations of the study.

2. Literature Review

The historical emphasis of traditional financial information does not answer the needs of stakeholders, who require information not only about future earnings but also about the firm's social and environmental responsibility and interactions with the environment and home communities (Adams 2011; Anderson et al. 2005).

The historical focus of financial reporting provides an incomplete picture of a firm's current status to auditors, investors, and creditors and has limited relevance for evaluating future prospects (Lev and Zarowin 1999; Lev 2001). Cohen et al. (2011) demonstrate that the efficiency and effectiveness of audits is improved through auditor use of non-financial information. However, the backward-looking financials are subjected to assurance services, are standardized among firms by GAAP, and possesses the currency of long use by external parties; thus stakeholders may over-rely on financial information that does not fully reflect the sources of value of a business. These issues with the historical and financial approach to disclosure are well known to the regulatory and investing community. Disclosure of non-financial information is essential to reduce the information asymmetry that exists between management and important stakeholders. Providing non-financial information allows investors to better assess key areas of performance and supports a broader view of corporate performance that also encompasses society at large (Holder-Webb et al. 2009). These insights are not new - the role of intangibles such as quality of management in corporate success has a long history in the literature. What is the most effective way of informing stakeholders of those elements of business performance that do not show up on the financial statements?

A number of recent initiatives designed to encourage the integration of financial and non-financial metrics in an integrated reporting framework have been taken over the past decade. For example, the Global Reporting Initiative (GRI) (2011) provides guidelines for presenting a sustainability report that emphasizes evaluating a company by its ability to promote sustainable growth that is also cognizant of environmental, social, and governance metrics. Adams et al. (2011) argue that three major differences between integrated reporting and traditional reporting are "incorporating a variety of financial and non-financial metrics and their interlinkages; capturing a longer-term perspective; and providing a better reflection of company strategy."

This raises the question that what metrics allow external users to evaluate a company's viability and the company's value proposition effectively. We classify non-financial indicators into two broad categories namely economic and non-economic metrics. Economic metrics focuses on the information, which tells about the performance of the firm in its business. On the other hand non-economic metrics are those, which informs about the firms involvement in other important areas like environment, society, social welfare etc. Recently investors and other stakeholders have shown more interest towards non-economic indicators rather than economic non-financial indicators. Corporate social responsibility (CSR) activity is an area of intense and increasing interest both on the practice and academic fronts. Due to this shift in the preference of information, it is necessary for the firms to give such information to their stakeholders.

3. Data and Methodology

3.1 Data

For our analysis, we have considered the period from February 2005 to October 2013 and collected monthly closing prices of both ESG and NIFTY indices for the above said period from Prowess Database of CMIE (Centre for Monitoring Indian Economy). The total number of observations is for 105 Months.

3.2 Identification of breaks

After obtaining the data, we plot the data so as to identify the structural breaks if any, in our data.

We obtain the following trends, when we plotted the closing prices for both the indices with respect to time:

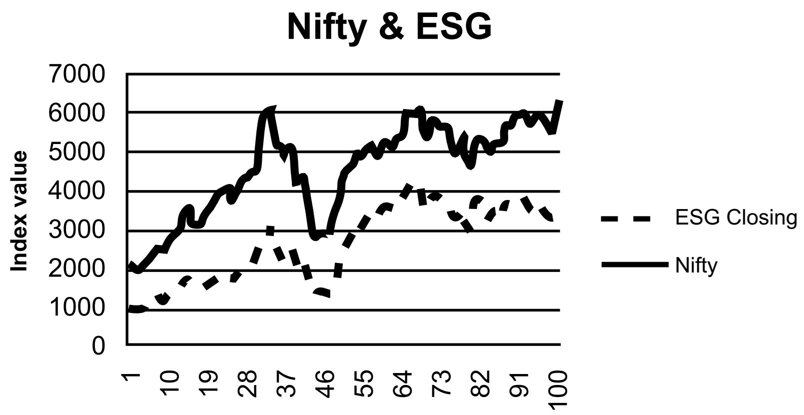

Figure 1: Plotting Nifty and ESG Indices to identify breaks

From the above trend, we can identify three breaks occurring simultaneously both in the case of ESG and NIFTY Index values. These breaks are as follows:

- February 2005 to October 2007 - Pre Crisis Period
- November 2007 to September 2008 - Crisis Period
- October 2008 to October 2013 - Post Crisis Period

We observe that the above-mentioned breaks occurred simultaneously in case of ESG and NIFTY. However, we are interested in knowing the fact that how these indices behaved during these periods and fitting a regression equation and using dummies for the identified break periods can facilitate us in the achievement of our objective. The estimated equations are presented later in this section.

3.3 Model in General Form and in the Form of Estimating Equation

We are interested in finding out the performance of Nifty and ESG Index for the whole period and the behavior of the index in the identified break periods for both the indices. The performance for both the indices has been measured by combining both the indices into one index and we name this new index so formed, as 'Relative Index'.

3.4 Calculation of Relative Index

We have formed a Relative Index by dividing the value of Nifty Index by the value of ESG Index. For instance, value of Nifty for February is 2103.25 and that of ESG is 991.33 so the value of Relative Index would be 2.12164 (2103.25/991.33). In the same manner Relative Index value has been calculated for rest of the periods.

Functional Equation:

Ln (Relative Index values) = f (Time)

Equation 1 (Relative Index Performance):

$$Ln\ (Relative\ Index\ value) = b_0 + b_1 T + u_t$$

Where, Ln (Relative Index values) = Natural log of Relative Index values

b_0 = constant/ intercept of Relative Index values

b_1 = Growth rate of Relative Index values

T = Time period (1 for February 2005, 2 for March 2005........105 for October 2013)

Equation 1A (Relative Index using time dummy for identified breaks):
Ln (Relative Index value) $= b_0 + b_1d_1 + b_2d_2 + b_3T + b_4Td_1 + b_5Td_2 + u_t$

Where, Ln ((Relative Index values) = Natural log of Relative Index values

$d_1 = 0, d_2 = 0$ for pre-crisis period

$d_1 = 1, d_2 = 0$ during crisis period

$d_1 = 0, d_2 = 1$ for post-crisis period

b_0 = constant/ intercept for pre-crisis period of Relative Index values

$b_0 + b_1$ = constant/ intercept during crisis period of Relative Index values

$b_0 + b_2$ = constant/ intercept for post crisis period of Relative Index values

b_3 = Growth rate for pre-crisis period of Relative Index values

$b_3 + b_4$ = Growth rate during crisis period of Relative Index values

$b_3 + b_5$ = Growth rate for post crisis period of Relative Index values

T = Time period (1 for February 2005, 2 for March 2005........105 for October 2013)

3.5 Hypotheses of the Study

For achieving the purpose of our study we have made the following hypotheses:

3.5.1 Primary Hypothesis

Null Hypothesis (H_0P_3): Performance of Relative Index is not skewed.

Alternate Hypothesis (H_1P_3): Performance of Relative Index is skewed.

3.5.2 Secondary Hypothesis for the primary hypothesis

Null Hypothesis (H_0S_{13}): Structural break has no impact on performance of Relative Index.

Alternate Hypothesis (H_1S_{13}): Structural break has an impact on performance of Relative Index

4. Analysis for Relative Index

Results that we have obtained from SPSS by estimating the data collected in estimated equation 2 [i.e. Ln (NONG) = $b_0 + b_1T$] are as follows:

Table-I: Results for Relative Index growth

Regression Statistics					
Multiple R	0.807987565				
R Square	0.652843906				
Adjusted R Square	0.649473458				
Standard Error	0.096234971				
Observations	105				
ANOVA					
	Df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.793856	1.793856185	193.6965	0.0000
Residual	103	0.9539	0.00926117		
Total	104	2.747757			
Value of parameters and t-statistics					
	Coefficients	*Standard Error*	*t Stat*	*P-value*	
Intercept	0.8091	0.018918	42.77106719	0.0000	
TIME	-0.0043	0.00031	-13.9174892	0.0000	

$\text{Ln}(\text{NONG}) = 0.8091 + 0.0043\text{T}$

P-Value (0.0000) (0.0000)

Relative Index Growth

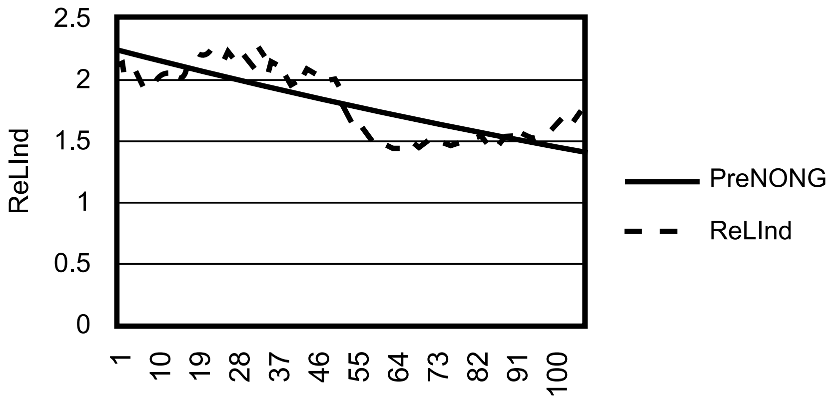

Figure 2: Relative Index Growth

4.1 Interpretation of value of the Parameters and t-test for Relative Index for the whole period

Coefficient of determination (R^2) for Relative Index is at 0.6528.This indicates that Relative Index is nicely captured by time period under study as the actual value of Relative Index is revolving around the predicted Relative Index as can be seen in the Figure 2.

Intercept of the Relative Index is 0.809 and it is significant. The intercept is positive as it shows that Nifty is an older index as compared to ESG Index and the beginning point of Nifty is comparatively higher than of ESG.

Growth rate of the Relative Index for the entire period is -0.43%. This means that for every 1% increase in ESG Index there is a fall of 0.43% in Nifty but this should not be interpreted that increase in ESG is leading to fall in Nifty. However, it means that ESG Index is performing better than Nifty for the given period. It can also be seen in Figure 2 that relative index is constantly falling over the period which implies that the growth in ESG Index is higher than that of Nifty.

Results that we have obtained from SPSS by estimating the data collected in estimated equation 1A [i.e. Ln (NONG) = $b_0 + b_1d_1 + b_2d_2 + b_3T + b_4Td_1 + b_5Td_2$] are as follows:

Table-II: Results for Relative Index growth with dummies

Regression Statistics					
Multiple R	0.888986681				
R Square	0.790297319				
Adjusted R Square	0.779706274				
Standard Error	0.076291039				
Observations	105				
ANOVA					
	Df	*SS*	*MS*	*F*	*Significance F*
Regression	5	2.171545	0.434308943	74.61939	0.0000
Residual	99	0.576212	0.005820323		
Total	104	2.747757			
Value of parameters and t-statistics					
	Coefficients	*Standard Error*	*t Stat*	*P-value*	
Intercept	0.7009	0.027177	25.79133386	0.0000	
Month	0.0029	0.001395	2.085208668	0.0396	
D_2	0.2615	0.285914	0.914731819	0.3625	
D_3	-0.0810	0.050649	-1.60102699	0.1125	
D_2T	-0.0088	0.007407	-1.19684139	0.2342	
D_3T	-0.0050	0.001501	-3.34151213	0.0011	

Ln (NONG) = 0.7009 +0.0029d1 + 0.2615d2 - 0.0810T - 0.0088Td1 - 0.0050Td2

P-Value (0.0000) (0.0396) (0.3625) (0.1125) (0.2342) (0.0011)

Relative Index Growth (Crisis Dummies)

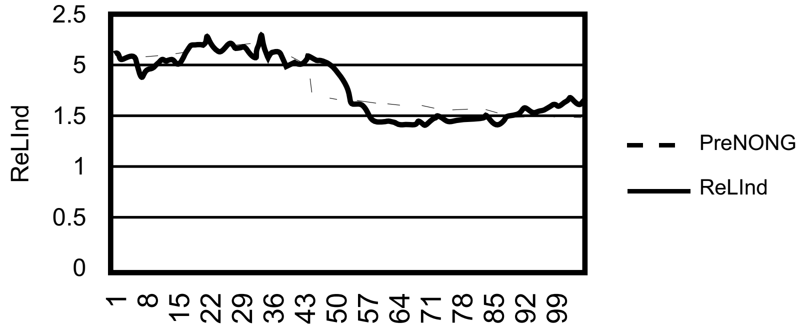

Figure 3: Relative Index Growth (Crisis Dummies)

Table-III: Analysis for Pre - crisis period

Relative Index			
	Identifier	Value of Parameter	P-Value
Intercept	B_0	0.7009	0.0000
Growth Rate	B_3	0.00290	0.0396

4.2.1 Interpretation of value of the Parameters and t-test for both the indices for pre-crisis period

Intercept of the Relative Index is positive 0.70. P-values of the intercept is significant which implies that there are some other factors besides the time-period which have significant effect on Relative Index growth rate.

During pre-crisis period, growth in Relative Index is at 0.29% and it is significant, which means that the performance of Nifty was comparatively better than the performance of ESG Index. Our pre-crisis period ranges from February 2005 to October 2007. During this period, concept of corporate responsibility was in developing phase and there was not much public awareness about it. Shift in paradigm was taking place but at an impending pace. During this period, businesses were still considered as merely a property institution rather than social institution and there was a weak link between business ethics and corporate responsibility. As there was no public awareness about business ethics and corporate responsibility, so investors were not absorbing and internalizing the behavior of socially responsible companies. As a result, the growth rate of socially responsible companies is less than the growth rate of general companies. No doubt that market was efficient but they were only responding to financial information. The standards relating to disclosure of non-financial information were not sufficiently developed and as a consequence there is ebbing impact of non-financial information on price discovery.

Table-IV: Analysis of crisis period

Relative Index			
	Identifier	Value of Parameter	P-Value
Intercept	B_0+B_1	0.9624	0.3625
Growth Rate	B_3+B_4	-0.0059	0.2342

4.2.2 Interpretation of value of the Parameters and t-test for both the indices for crisis period

Intercept of the Relative Index is positive 0.9624. However, the P-value of the intercept is not significant. We observe that because of the crisis, there is a fall in the Relative Index and the growth rate is negative to the tune of -0.595%. It means that the fall in Nifty is relatively higher than the fall in ESG Index. During the period of crisis, we observe that the performance of index comprising of socially responsible firms is relatively better. This is because the effect of crisis was not as severe for such firms as compared to other firms. This shows that the markets are recognizing and absorbing non-financial information.

Table-V: Analysis for Post - crisis period

Relative Index			
	Identifier	Value of Parameter	P-Value
Intercept	B_0+B_2	0.6198	0.1125
Growth Rate	B_3+B_5	-0.0021	0.0011

4.2.3 Interpretation of value of the Parameters and t-test for both the indices for post-crisis period

Intercept of the Relative Index is positive 0.6198 but p-value for the intercept is more than 0.05 so it is not significant at 5% level of significance. In the post-crisis period, there is a fall in the Relative Index and the growth rate is negative to the tune of -0.210%, which means that the performance of Nifty Index is comparatively lower than the performance of ESG Index and the negative growth rate is also significant at 5% level of significance. We observe that after the crisis, markets have continuously started considering non-financial information and the absorption of non-financial information was not episodic. It means that after the crisis socially responsible firms are getting a clear advantage over other firms.

5. Conclusion

Hitherto it can be seen that there exists no sound framework for Business Ethics. The concept of Business Ethics is somewhat mirage. Traditionally, there was no conceptual framework for business ethics so it was just limited to payment to various factors of production at the prices established in the market. Hence, in the traditional sense there existed no social responsibility. If there was any social responsibility, then it was purely on personal and individual basis. So traditionally CSR was just entirely on voluntarily basis and since it was on voluntarily basis, it logically limit down to philanthropy.

Analysis indicates that over the period of time the firms, which are socially responsible, are performing better than the other firms. This change can be attributed to the global crisis when the market participants understood the meaning of non-financial information and started considering it as a useful input for decision taking rather than considering it as wasteful.

5.1 Hypotheses and Their Results

• ***First Primary Hypothesis***

Null Hypothesis (H_0P_3): Performance of Relative Index is not skewed.

Alternate Hypothesis (H_1P_3): Performance of Relative Index is skewed.

Result: Null hypothesis is rejected and Alternate hypothesis is accepted i.e. performance of relative index is skewed.

• ***Secondary Hypothesis of first primary hypothesis***

Null Hypothesis (H_0S_{13}): Structural break has no impact on performance of Relative Index.

Alternate Hypothesis (H_1S_{13}): Structural break has an impact on performance of Relative Index.

Result: Null hypothesis is rejected and Alternate hypothesis is accepted i.e. structural breaks have impact on the performance of relative index.

5.2 Contribution of the Study

• **This study has linked non-financial reporting with accounting:** This study has linked non-financial reporting with traditional accounting, which is static. The accounting information system however is intended to be dynamic because it relates to dynamic environment and to the larger stakeholders. Therefore this study is an off shout of the accounting information system and it tends to go beyond the traditional static framework of accounting that is essentially financial in nature.

• Identification of the breaks: We have identified the structural breaks with the help of closing index values on the graphs. These breaks helped us in studying the performance of index in different structural breaks and give interpretation about the performance in these structural breaks.

• Indicates the behavioral change of the market participants: The analysis indicates that due to crisis the market participants have started considering non-financial information in their decision-making, which clearly shows that the markets have matured.

5.3 Limitations of the Study

• Numbers of firms were limited: The firms in the analysis were only 39 that are very less even in the Indian context. A larger pool of firms can be taken for analysis so that the results are verified.

• Time period for the analysis was short: We have studied the impact of financial and non-financial factors on the performance of the firms for a period from February 2005 to October 2013. The period of very short but as the ESG Index was discontinued so this period was selected. But, still the results of the study remain very useful as it shows that very change in the markets when the behavior of the market participants' changed and non-financial information became relevant. In the time to come as markets are getting more matured, we can expect that the performance of socially responsible firms will be far better as compared to other firms.

5.4 Scope of Further Study

• **Number of firms can be increased:** As the number of firms is limited in the analysis, we can broaden the analysis by increasing the number of firms by selecting a broader index.

• **Time period can be extended:** We can also extend the time period and calculate the ESG Index on our own by using the methodology used by S&P as the ESG Index had been discontinued.

5.5 Implications

Analysis shows that the performance of ESG Index is better as compared to Nifty Index in the crisis and post-crisis period which indicate that the markets are maturing where non-financial information is also given the same weightage as given to financial information. It also means that the expenditure done by the companies for such social activities is not wasteful as it was considered earlier.

References

Adams, C. (2011). The ethical, social, and governmental reporting-performance portrayal gap. *Accounting, Auditing and Accountability Journal, 17*, 5.

Anderson, A., Herring, P., & Pawlicki, A. (2005). EBR: The next step. *Journal of Accountancy,* June, 71-75.

Brown, T. J., & Dacin, P. A. (1997). The company and the product: Corporate associations and consumer product responses. *Journal of Marketing,* 61 (1), 68-84.

Cohen, J., Holder-Webb, L., Nath, L., & Wood, D. (2011). Corporate reporting of non-financial leading indicators of economic performance and sustainability. Retrieved from: http://ssrn.com/abstract=1420977.

Global Reporting Initiative (GRI). (2011). *Sustainability Reporting Guidelines*. Amsterdam: Global Reporting Initiative.

Handelman, J. M., & Arnold, S. J. (1999). The role of marketing actions with a social dimension: Appeals to the institutional environment. *Journal of Marketing*, 63 (3), 33-48.

Holder-Webb, L., & Cohen, J. (2008). The association between disclosure, distress, and failure. *Journal of Business Ethics*, 75, 301-314.

Lev, B. (2001). Intangibles: *Management measurement and reporting.* Brookings Institution Press, Washington, D. C.

Lev, B., & Zarowin, P. (1999). The boundaries of financial reporting and how to extend them. *Journal of Accounting Research,* 37, 353-383.

Price Water House Coopers. (2002). Non-financial measures are highest-rated determinants of total shareholder value, Price Water House Coopers finds. *Management Barometer*, April 22.

Sen, S., & Bhattacharya, C. B. (2001). Does doing good always lead to doing better? Consumer reactions to corporate social responsibility. *Journal of Marketing Research*, 38(2), 225-243.

Simnett, R., Vanstraelen, A., & Chua, W. F. (2009). Assurance on general-purpose non-financial reports: An international comparison. Working paper, Universiteit Antwerpen.

Social Investment Forum. (2006). *2005 Report on Social Responsible Investing Trends in the United States: 10-Year Review*. Social Investment Forum Industry Research Program: Washington, DC.