

Investor's Guide to Understanding Corporate Sustainability Performance Metrics: Beware of Flawed Metrics

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Abstract

Investor interest in and demand for sustainability information is increasing. This growing interest is due to evidence that corporate sustainability practices enhance corporate financial performance. Paralleling this increased interest by investors, the Sustainability Accounting Standards Board (SASB) has concluded that the quality of information disclosures is lacking. This paper supports these views by illustrating the wide variety of circumstances under which companies, by failing to consider confounding factors, normalize sustainability metrics results that report flawed measures of efficiency improvements. The authors demonstrate that reliable and accurate measurement of a company's improved environmental efficiency can be obtained only by the application of a flexible budgeting methodology. A flexible budgeting approach isolates the results of a company's initiatives so that measures of improvement are not distorted by confounding factors. We provide examples demonstrating how the application of flexible budgeting avoids this problem and provides more accurate reporting than traditional average-intensity measures. This paper also offers a series of questions that investors can ask to determine the nature and extent of flexible budgeting used in sustainability metrics reporting. An understanding of the flexible budgeting method allows investors to ask appropriate questions and engage in informative discussion with management. Such dialog can help overcome many of the distortions that arise in reporting sustainability performance and improve investor decision making.

Introduction

Investor interest in and demand for sustainability information is increasing, as evidenced by several trends. First, the U.S. Social Investment Forum Foundation (SIF) reported that U.S. sustainable, responsible, and impact (SRI) investing grew from \$6.57 trillion at the start of 2014 to \$8.72 trillion at the start of 2016, an increase of 33 percent. One out of every five dollars under professional management now follows SRI strategies (U.S. SIF Foundation, 2016). During this period the World Health Organization also reported that investors increasingly strive to incorporate climate change in their portfolios, from both moral and long-term economic value perspectives (World Health Organization, 2015). Supporting this increased interest requires specific environmental, social, and governance (ESG) information. This need for additional information is supported by a recent study published by the Principles for Responsible Investment Association titled, “Shifting Perceptions: ESG, Credit Risk and Risk.” The report concludes that, “Credit Rating Agencies are increasingly researching ESG topics beyond traditional rating analysis. This is contributing to the development of evaluation tools and deeper understanding of the issues at stake” (PRI 2017).

Observing this increased interest, the Sustainability Accounting Standards Board (SASB)¹, established in 2011, concluded in its initial report on the state of sustainability reporting that “in today’s rapidly changing business climate, investors are increasingly looking beyond financial statements for a more complete picture of a company’s ability to create value over the long term. For example, in response to a recent effort by the U.S. Securities and Exchange Commission (SEC) to modernize its disclosure requirements, investors made a resounding call for improved sustainability disclosure” (SASB 2016).

What has led to this increased interest? In addition to the important direct benefits of improved corporate sustainability, operating sustainably enhances corporate financial performance. Harvard Business School researchers examining an 18-year period concluded that, “the High Sustainability firms outperformed the Low Sustainability ones in terms of both stock market and accounting measures while the market did not actually expect this outperformance” (Eccles 2014).

¹ The mission of the SASB “is to develop and disseminate sustainability accounting standards that help public corporations disclose material information useful to investors. That mission is accomplished through a rigorous process that includes evidence-based research and broad, balanced stakeholder participation.” SASB Standards are designed for inclusion in SEC filings as a vehicle to improve sustainability communications and open a dialogue between companies and investors.

Motivation for Developing Reliable Sustainability Metrics

Although companies in their SEC filings have begun to address a growing number of sustainability factors that have impacted – or are likely to impact – their financial condition and operational results, the SASB has said that the quality of these disclosures is lacking. This puts investors at a disadvantage when it comes to fully understanding their risk exposures. In its 2016 State of Disclosure report, SASB notes that,

Investors and their portfolio companies have become increasingly aware of the link between sustainability factors and business outcomes. For example, increased energy efficiency can lead to operational cost savings; effective resource management can reduce input price volatility and the risk of supply disruptions; and stronger data security practices can mitigate the risk of fines, litigation, and reputational harm, while also lowering a firm's cost of capital [SASB 2016].

However, investors should ask if companies are using relevant metrics to measure and report their sustainability performance. Many companies, for example, currently disclose intensity measures like changes in the average pounds of waste per unit of production as a proxy for reporting their efficiency and communicating sustainability improvements. The use of these intensity measures to evaluate efficiency improvement can mislead management and investors into believing a company's policies are achieving desired efficiency improvements when, in fact, they are not. A long list of confounding events can render the change in average intensity, however carefully reported, useless as a measure of efficiency improvement. Fortunately, the application of flexible budgeting provides a solution, allowing companies to more accurately measure changes in their overall corporate efficiency. The remainder of this paper will explore how the application of this well-known and widely used managerial finance methodology can improve the accuracy of reported sustainability measures.

Analysis

Starting in 2012, based on research funded by the Institute of Management Accountants, we published a series of papers in ESG and management journals demonstrating that reliable and accurate measurement of a company's improved environmental efficiency can be obtained only by the application of a flexible budgeting methodology. These papers illustrated the variety of circumstances under which normalized sustainability metrics, such as waste per unit of production, report flawed measures of efficiency improvements achieved over time. While it is true that efficiency improvements impact average intensity, there are significant confounding factors that also impact average intensity, occluding its

usefulness as a measure of improved efficiency. These confounding factors include (1) shifts in product mix; (2) outsourcing and insourcing of operations; (3) acquisition and divestitures; and (4) facility utilization.

A flexible budgeting approach isolates the results of a company's sustainability initiatives so that measures of improvement are not distorted by confounding factors. Corporations already use flexible budgeting to measure financial performance. Applying the same methodology to sustainability measurements can improve managerial decision making and provide stakeholders with more useful information about corporate sustainability performance.

Explanation of Flexible Budgeting

Financial managers routinely use flexible budgeting to analyze cost variances due to the dynamic nature of business along with other confounding factors beyond their control. Corporate management develops a flexible budget that can be tailored to any level of activity within an expected range – that is, the relevant range. A flexible budget thus enables managers to make accurate performance evaluations when their business activities exceed or fall short of expectations. This process requires comparing actual costs to a flexible-budget forecast of costs at the new level of production.

Sustainability managers can apply the same methodology to isolate the cause(s) of changes in sustainability, and to take corrective actions when indicated. For example, resource consumption and waste generation contain fixed components that are independent of changes in facility utilization, and variable components that are dependent on the level of facility utilization. Using the flexible budgeting method, Bartley, et al. (2017) demonstrate how to accurately isolate the change in efficiency by excluding confounding factors. Recognizing that many investors may not understand flexible budgeting, we offer an example that illustrates how to apply the methodology to measure environmental efficiency improvement in water usage (an environmental aspect) when a company experiences changes in product demand and associated production. We look specifically at water usage.

Assume Glacier Brewing has two products, Beer Rocky and Beer Icy, and that they measure production in barrels (BBL). During the production process, Beer Icy consumes more water (936 gallons per BBL) than Beer Rocky (260 gallons per BBL). Glacier Brewing proudly reports that it achieved a significant reduction in the average water intensity of its beer operations from 395.2 gallons per BBL of output in year 1 to 330.7 gallons in year 2 (a 16.3% reduction). We will now analyze the facts.

In year 1, Glacier Brewing produced 1,600 BBL of Beer Rocky, using 416,000 gallons of water for a water intensity rate of 260 gallons per BBL of output ($416,000/1,600$). For its Beer Icy, Glacier Brewing consumed 374,400 gallons of water to produce 400 BBL. Thereby, a total of 790,400 gallons of water were consumed in year 1, producing a product mix of 1,600 BBL of Beer Rocky and 400 BBL of Beer Icy. Note that Beer Rocky consumes much less water than Beer Icy (water intensity of 260 gallons per unit of output versus 936 gallons).

In year 2, Glacier Brewing reported Beer Rocky sales growth and, thus, a corresponding increase in production to 2,140 BBL using a total of 556,400 gallons of water. In contrast, Beer Icy suffered a 37.5% sales reduction with only 250 BBL produced and sold. With this shift of product mix, one needs to inquire whether Glacier Brewing's 16.3% reduction in average water intensity (from 395.2 gallons of output per BBL to 330.7 gallons) reflects a true improvement in the company's water efficiency.

Using the flexible budgeting approach, it is estimated that Glacier Brewing would consume 790,400 gallons of water, assuming no change in efficiency: 556,400 gallons ($2,140 \times 260$) for Beer Rocky and 234,000 gallons (250×936) for Beer Icy. Table 1 shows these estimates match actual water consumption reported by Glacier Brewing. The flexible budgeting method correctly demonstrates that no efficiency improvements occurred for Beer Rocky, Beer Icy, or for the total water used by the company. The method instead connects the reduction in average water intensity to the shift from a high water-intensity product to a low water-intensity product. Conversely, the flexible budgeting method can help Glacier Brewing's management understand and explain an adverse change of average water intensity when there is a shift of product mix from a low-intensity product to a high-intensity product. The example in Table 2 shows a 35.1% increase in average water intensity that is due solely to a decrease in sales of Beer Rocky and an increase in Beer Icy; the company as a whole experienced no change in water efficiency.

TABLE 1							
Glacier Brewing	Year 1			Year 2			Efficiency Improvement
	Production BBL	Actual water used, Gal	Rate Gal/BBL	Production BBL	Actual water used, Gal	Flexible Budget, Gal	
Beer Rocky	1,600	416,000	260	2,140	556,400	556,400	
Beer Icy	400	374,400	936	250	234,000	234,000	
Total	2,000	790,400		2,390	790,400	790,400	0.0%
Average Intensity		395.2			330.7		
Shift from HIGH intensity to LOW intensity product.							
TABLE 2							
Glacier Brewing	Year 1			Year 2			Efficiency Improvement
	Production BBL	Actual water used, Gal	Rate Gal/BBL	Production BBL	Actual water used, Gal	Flexible Budget, Gal	
Beer Rocky	1,600	416,000	260	880	556,400	228,800	
Beer Icy	400	374,400	936	600	234,000	561,600	
Total	2,000	790,400		1,480	790,400	790,400	0.0%
Average Intensity		395.2			534.1		
Shift from LOW intensity to HIGH intensity product.							

Questions Investors Should Ask

Increasingly, investors seek information about a company's aspiration to engage in sustainability, its approach, program goals, and focuses. Companies need to report policies and guidelines that reflect how their sustainability programs align with the values contained in mission and vision statements. These policies and guidelines provide investors information about the key entity-level controls that are embedded in the organization's operations. Investors should identify sustainability efforts that are the focus of the company's investment strategies. Does management set clear targets for specific environmental aspects, such as reducing greenhouse gas (GHG) emissions, energy use, fuel use, water use, and solid and liquid waste generation?

The CFA Institute advises investors to systematically consider ESG issues in order to make better-informed investment decisions.

To effectively monitor a company's ESG issues, investors should know:

- How does the company measure related investments' ability to improve sustainability performance?
- Do sustainability managers use metrics that accurately reflect the corporation's performance in managing resources and reducing waste?

To evaluate a company's continuing effort in its sustainability program, investors should know:

- What metrics are employed by management to report their ESG program performance over time?

- Does management understand the fallacy of using the average intensity as a measure of efficiency?
- How do sustainability managers identify the drivers of change in average intensity?

To actively engage management and influence their practices regarding ESG performance evaluation, investors should know:

- How confident are sustainability managers in assessing the reported efficiency improvements of the sustainability-related investments?
- Is the company's management aware of issues related to measuring the actual efficiency of its sustainability program?
- Does the company's measurement of progress align with a flexible budgeting process? If not, how would implementing a flexible budgeting approach change the understanding of performance?

Sustainability Report Transparency

In addition to reporting totals for sustainability aspects, most companies disclose an average intensity metric as a measure of efficiency. Reported average intensity is calculated as the total amount of resources consumed or waste generated divided by a relevant operating parameter. Common operating parameters include the company's total revenue or productive output. Examples include tons of CO₂ or gallons of water per dollar of revenue. Some managers and investors, in turn, use the reported average intensities to rank companies' environmental productivity within their respective industry sector (SASB Q4, 2016). However, Bartley, et al. (2017) illustrate that "[a]verage intensity is most useful in providing perspective on an industry sector's resource consumption and waste production relative to other sectors." Its use in comparing companies within an industry sector is more limited because of differences in the scope of activities and sourcing policies among the companies. Investors should ask companies to isolate their actual sustainability program efficiency improvements by excluding other factors that contribute to the change in average intensity. The flexible budgeting methodology helps investors identify several essential questions that need to be addressed in quantitative analyses and by probing management. A few of these are discussed below.

Change in Product or Service Mix. Has the company identified the impact of acquisitions and divestitures on its product mix and its measures of efficiency? How does the company's reporting system consolidate its environmental efficiency performance information across all its products and services; and has the company assessed the impact of product mix changes on average intensity measurements? As shown in Tables 1 and 2, if the relative

mix of product or service activities changes, a company's overall average intensity will not accurately reflect the change in sustainability-related efficiencies.

Change in Facility Utilization. How have market conditions affected the company's facility utilization? And if facility utilization has changed, does the company track both fixed and variable components of resource consumption and waste generation? If not, an increase (or decrease) in facility utilization will reduce (or increase) the allocated fixed components of sustainability attached to each unit of production. In turn, this will reduce (or increase) average intensities in a way unrelated to any real change in sustainability efficiencies.

Outsourcing and In-sourcing Changes. How does the company measure and isolate the impact of changes in outsourcing and in-sourcing activities on average sustainability intensity measurements? For example, if a water-intensive manufacturing step is outsourced while final production remains within the company, the average intensity will decrease because water usage on-site decreases while production remains the same. Does a change in average intensity result from nothing more than a change in what is being included or excluded in the numerator, the denominator, or both?

Conclusion

Reed, et al. (2016) challenged "[a]sset owners and managers [to] think more critically about how to incorporate climate data into their investment decision making." Further, a study by the consulting group EY and the Boston College Center for Corporate Citizenship reports that two of the primary challenges to sustainability reporting are accuracy and/or completeness of data (EY 2016). Investors want to actively engage company management to influence their practices regarding ESG performance evaluation; the focus of this engagement is often on evaluating how accurately sustainability managers report and assess efficiency improvements resulting from changes in operations and sustainability-related investments.

To assess a company's continuing efforts in advancing its sustainability program, investors should request that companies provide more robust and accurate measures of sustainability performance. In doing so, they need to probe companies to learn the efficacy of metrics employed by management to report ESG performance over time. Flexible budgeting provides more accurate insights into published sustainability results, and investors should determine if it is being used to accurately communicate a company's sustainability performance.

To properly adjust for confounding factors, this paper provides a series of questions that investors can ask to determine the nature and extent of flexible budgeting used in the

reporting of sustainability metrics. An understanding of the flexible budgeting method allows investors to ask appropriate questions and engage in informative discussion with management. It also helps to overcome many of the distortions that arise in reporting sustainability performance, in turn improving investor decision making.

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