Global Reporting Initiative: Does it make a Difference?

Summary

The stated goal of the Global Reporting Initiative (GRI) reporting framework is two-fold: to make it easier for organizations to **communicate** their sustainability performance to stakeholders**,** and to **drive** companies to become *more* sustainable. We aim in this paper to test if GRI-reporting has any material positive impact on the carbon footprint of the reporting companies. We analyze the CO_2 emissions data from 45 A-level GRI-reporting companies, over a period of five years and across five industry sectors, comparing them with a control group of 20 non-reporting companies, to assess any direct impact of reporting on emissions. We perform a statistical analysis of the 5-year cumulative change in absolute emissions and emissions intensity for both groups of companies from 2008-2012. In both cases, we find a strong overlap between the two of both groups strongly favouring the "null hypothesis" that there's no correlation between GRI-reporting and emissions reduction.

Keywords: GRI reporting; Sustainability performance; Carbon emissions; GHG emissions; CO_2 emission intensity.

Introduction

The GRI is an independent organization that aims to encourage and support sustainability reporting by providing a reporting framework to participating organizations. It provides one of the most accepted definitions of sustainability reporting: "Sustainability reporting is the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development" (Global Reporting Initiative). The original reporting framework was developed as an independent project within the organization, whose aim was to enforce existing guidelines on corporate environmental conduct.

In its *GRI Learning Series,* entitled "GRI Sustainability Reporting: How valuable is the journey?", in answer to "Section 1: Why do organizations embark on a sustainable reporting process?", Answer 1.c states: "To plan activities, become more sustainable and position the company". On page 14, the report specifically states: "Underlining the drive to build a continually improving sustainability management system is the ultimate objective of becoming a more sustainable and more coherent organization." It is now widely accepted that GRI reporting serves two main purposes (Lozano, 2013): (i) to assess the triple-bottom line (economic, environmental and social dimensions) of an organization, and (ii) to communicate the company's efforts and progress in Sustainability to its stakeholders (Dalal-Clayton & Bass, 2002).

Interestingly and notwithstanding the extensive literature on sustainability reporting in general and GRI in particular, there has been, to our knowledge, no study that attempted to look at the impact of reporting on any specific sustainability metric relative to non-GRI reporting companies. This, in our opinion, is the acid test of whether sustainability reporting truly helps drive forward sustainability performance. In this paper, we chose to analyze both the CO_2 emission in absolute values (Metric-tons of Scope 1+ Scope 2 CO_2 emissions) as well as the emissions intensity defined as the amount of metric tons of CO_2 (Scope 1 + 2) per millions of dollars of revenues (Metric-ton/$MM).

Research Procedure & Methods

We selected sixty-five companies belonging to five industries for our research project. The industries in question were: (i) Mining and materials, (ii) Utilities, (iii) Energy, (iv) Chemicals, and (v) Automotive. We focused on these five industry sectors specifically because, as shown by Fig.1, they were identified as responsible for over 95% of the total stationary Carbon emissions according to the Carbon Disclosure Project (CDP) database (CDP, 2011). We then collected the emission-data for a set of comparably sized GRI Reporting and non-GRI Reporting companies in each industry.

For the GRI Reporting companies, the GRI Report database was used to select companies in the "Large" and "Multinational Enterprise" categories that had submitted reports for the entire 2008-2012 period, and had received either an A or A+ ratings from GRI throughout those 5 years. These criteria were the key limiting factors in collecting a greater number of qualifying companies. Emissions data was collected in units of equivalent metric tonnes of CO_2, and includes both direct (Scope 1) and indirect (Scope 2) sources[1], resulting from the company's total industrial activities on a global basis.

To analyze a company's sustainability performance, we selected two metrics: (i) the absolute CO_2 emissions in Metric-tons and (ii) the Carbon Emission Intensity metric defined as the company's global metric tonnes of total CO_2 emitted per million USD in total revenue (Metric-tons/$MM) for a given year. We then analyzed both metrics over the time period of 2008-2012. Our hypothesis is as follow:

Does A-level compliance with the GRI process drive materially higher reduction in CO_2 emissions in absolute and intensity levels, relative to non-reporting entities?

Key Findings

[1] Scope 1 emissions include all direct GHG emissions that are owned or controlled by the reporting entity such as emissions from the entity's vehicles, stationary sources, on-site landfills and wastewater treatments, etc. Scope 2 emissions include all indirect GHG emissions from consumption of purchased electricity, heat or steam.

In Figure 1(a) and (b), we plot the across-industry 2008-2012 5-year cumulative change in absolute CO_2 emissions (Mt- CO_2) for the GRI and the Non-GRI entities respectively. Both figures show the cross-industry data in histogram format, superimposed by the corresponding normal distribution. Fig. 1(a) normal distribution exhibits a Mean of 6.24% (increase in emissions) and a Standard Deviation of 28.76%, while Fig. 1(b) distribution exhibits a Mean of -3.18% (decrease) and a Standard Deviation of 24.40%. The two distributions have an overlap of 84.56%, suggesting very little statistical difference between the two sets of data and hence preventing us from rejecting the null hypothesis. Furthermore, even considering the GRI-reporting set in isolation, a positive *increase* of 6.24% in absolute emissions with a wide standard deviation of over 28% is hardly indicative of any improvement, and falls far short from the reduction targets set by the Kyoto Protocol of -8% to -21% for that same time period for most European countries (Wikipedia, 2015).

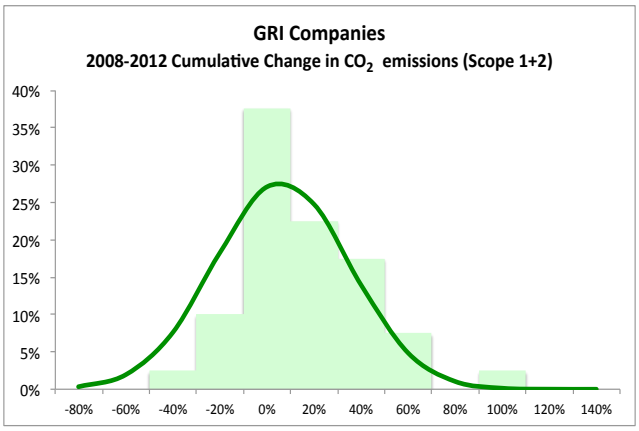

Figure 1(a): Across-industry 5-year cumulative change in CO_2 emission by GRI-reporting companies

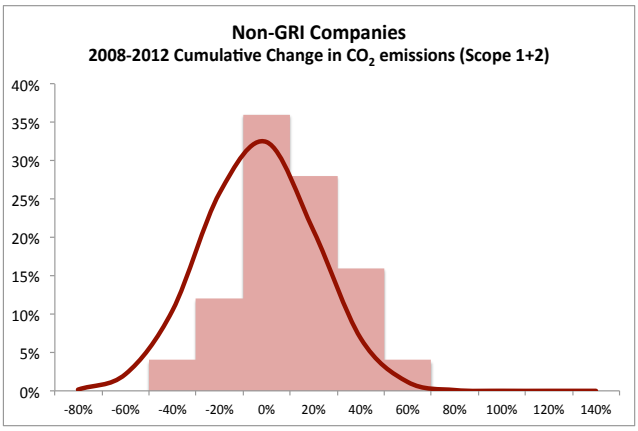

Figure 1(b): Across-industry 5-year cumulative change in CO_2 emission by non-GRI reporting companies

Figure 2(a) and (b) show the 2008-2012 cumulative change in the CO_2 emissions intensity (Mt- CO_2/$ MM) for the same set of GRI and non-GRI companies respectively. As expected, due to the revenue growth achieved by most companies during that 5-year period, the across-industry mean has dropped for both categories of companies, i.e. -15.18% and -16.70% for the GRI and non-GRI reporting companies respectively, and standard deviations of 23.51% and 15.29% respectively. For this metric, the means are almost identical for both sets of companies and with an overlap of 79.39% between the corresponding normal distributions of both. This leads us again to conclude that we cannot reject the null hypothesis and conclude instead that the GRI-reporting has no material impact on the CO_2 emission intensity of the reporting entities. Another pertinent observation that we make is that it is well known that emissions from power plants have significantly decreased from 2008 to 2012, thanks to the hydro-fracking revolution, which has significantly increased the share of relatively cleaner natural gas in the energy mix. The estimated decrease happens to be about 16%

(Decker, 2014), which is disturbingly close to the means found in Figure 2(a) and (b) for both sets of companies during that same period of time. This would suggest that the reduction in emission intensity is simply and primarily driven by the switching to natural gas rather than any other actions or strategies by the companies, including GRI reporting entities.

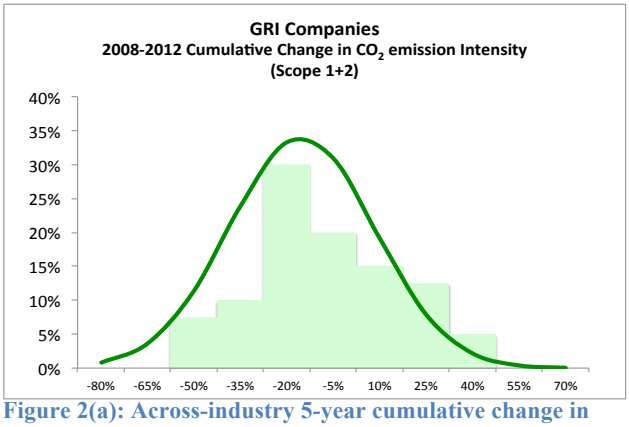

Figure 2(a): Across-industry 5-year cumulative change in CO_2 emission intensity by GRI-reporting companies.

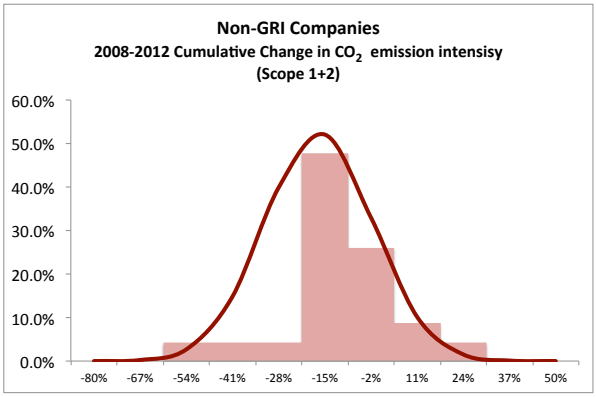

Figure 2(b): Across-industry 5-year cumulative change in CO_2 emission intensity by non-GRI reporting companies

Discussion & Conclusion

In our across-industry analysis, we found no statistically significant difference between the two groups of companies for either metric. In fact the overlap between the normal distributions for both sets was over 80%. Furthermore, we found there was a slight cumulative increase of 6.24% in the cross-industry average of absolute emissions in the period of 2008-2012 for the GRI-reporting entities, while the non-GRI entities registered a slight decrease of -3.18%. However, the large standard deviations of 28.76% and 24.40% for both sets respectively make this difference statistically insignificant. On the other hand, the emission intensity data shows a statistically significant decrease of about -16% for both sets of companies. We attribute this decrease to the increasing use of cleaner natural gas in power plants, which has led to a similar 16% decrease in emissions over the same time period. In both cases, the data supports the null hypothesis that GRI reporting did not impact in any significant way the emission levels of the reporting entities.

In conclusion, our study, despite its limitations, appears to be the first of its kind to investigate the impact of GRI reporting on CO_2 emissions for the largest available sample of GRI and non-GRI reporting companies, across five important industry sectors. Our findings favour the null hypothesis, namely that there is no correlation between GRI reporting and CO_2 emissions. Instead, they suggest that GRI has no direct impact whatsoever on companies' carbon footprint, and that any apparent correlation in a particular sector is most likely due to other drivers, such as use of natural gas,

business strategy, government regulations, or public opinion, and which seem equally shared by non-GRI entities.

Footnotes

Author Biography

Dr. Lotfi Belkhir is a physicist, inventor, entrepreneur and currently the Endowed Chair in Eco-Entrepreneurship at the Walter G. Booth School of Engineering Practice at McMaster University. Dr. Belkhir's current research and teaching have for core mission the advancement of a sustainable society through innovation, entrepreneurship, design and policy. Dr. Belkhir is also a proven practitioner; he founded in 2001 Kirtas Technologies, the maker of the world's first and fastest automatic book scanner, which, under his leadership, ranked as of one of Inc. 500 fastest growing companies in America two years in a row. Dr. Belkhir is a regularly featured speaker on the subjects of Entrepreneurship, Innovation, Sustainability and Corporate Social Responsibility at many venues. He holds a Ph.D. in physics and a Master's in Management of Technology. He is fluent in English, Arabic and French.

Acknowledgments

I am grateful to McMaster University for the research grant No. 5-55050 without which this paper would not have been possible.

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