Management 421   Professor Mark Cohen
Module 4, Spring 2013   317 Management Hall
Mon/Wed. 11:20 AM - 12:50 PM; Room 220   Phone: (615) 322-0533
Office Hours by appt.   email: mark.cohen@owen.vanderbilt.edu

Financial Analysis of Environmental, Social and Governance (ESG) Data

Environmental, Social and Governance (ESG) performance metrics have traditionally been difficult to obtain in any comprehensive or consistent manner. Over the years, standardized metrics have been developed through the Global Reporting Initiative (GRI). Several thousand multi-national companies now report on ESG performance using the GRI framework and Bloomberg is now making these metrics available to mainstream investors.

In the meantime, the newly formed International Integrated Reporting Committee (IRRC) was established to identify a framework for future reporting requirements that would incorporate financial and non-financial reporting. The IRRC is a serious effort whose members include FASB, ACCA, the International Association of Securities Regulators, World Bank, and the major accounting firms. Several leading publicly traded companies are already experimenting with integrated reporting and several countries are beginning to require some form of integrated reporting. Thus, it is only a matter of time before this becomes a norm or requirement in the U.S. Ultimately, financial analysts will have growing access to and training on the use of ESG metrics. Anticipating and being ahead of the curve, this course provides students with background knowledge on ESG metrics and experience applying standard financial models to analyze companies and portfolios.

Leading financial market research firms are beginning to use Bloomberg and other similar data aggregators to uncover risks and opportunities not previously available to the market. The course will use standard financial models to analyze companies and portfolios - and be very project oriented with students focusing on their own interests. Thus, the course is designed primarily for finance students planning to pursue jobs in either corporate finance or investment management. However, it would also be appropriate for students in Net Impact who are planning less traditional careers and are looking for additional financial and accounting skills to further build their sustainability skills and knowledge.

Students are expected to come to class and to be prepared by reading material in advance of class. Class participation is a significant part of the grade.

Grading:

Grading weights:	Individual assignments (2 x 10%)	20%
	Class participation	10%
	Peer evaluation	10%
	Group assignments (3 x 10%)	30%
	Group project	30%

Group Project

Students should form groups of 2-4. **You should make sure that at least one person in the group has taken Corporate Valuation.** I reserve the right to move students around to ensure that all class members have a group to work with. The goal of the final project is to explore new ideas about how ESG factors might be used in financial analysis and to increase students depth of knowledge in both ESG and Bloomberg. Each group should determine a project based on their interests and expertise. **Attached to the syllabus are a few ideas – but these are not meant to be exclusive.** Whenever you have an idea, you should feel free to float it as a trial balloon either in class or meeting with me directly. On the final day of class, each group will report to the class on an update of their project and progress to date. The final class presentation will not be graded – it is an opportunity to exchange ideas, obtain feedback from your classmates, etc. Instead, the final project will be due during exam week and will be graded based only on the final outcome.

The format for the final group project will depend upon the actual project. Generally, I would expect a written paper (anywhere from 5-15 pages) and attachments that might include spreadsheet printouts and/or spreadsheet attachments. However, the final output is very flexible – as long as you discuss with me in advance!

Course Honor Code Policy

Students are bound by the Honor Code and the following specific guidelines for all work completed in this course.

- Group work: All assignments in this course will be completed in "designated groups." As such, all steps of the assignment are to be carried out solely by members of the designated group. That means group members should not discuss the assignment with students outside their group – including generating ideas, general discussions about the assignment, sharing of research, drafting the final work product, etc.
- Data Sources and Tools
    - Cases: When writing up a case assignment, you should not conduct any research outside the case or the materials otherwise assigned or provided to you in class. Thus, you should not attempt to follow-up on the case to see what happened or go beyond any of the facts in the case.
    - Group Project: Obviously, this requires outside research and you are free to use any source available with the following exceptions: (i) You may not consult with current or former students outside your group, (ii) You may not consult with any other paper written by a student or professional that is designed to assist students in writing term papers or otherwise to help them on such school project.
- Plagiarism, which includes the unauthorized use of previous years' materials (e.g., examinations, case analyses, homework assignments, etc.), is a violation of the Honor Code.
- Written deliverables must use appropriate citations to signify when arguments or analyses rely on the ideas or insights of others, including any of the readings in the

classpack or external sources (including websites). If you are uncertain about whether or not something should be placed in quotation marks and/or cited, it probably should be!
- Any use of analyses or any other material in any format from other sections of this course or a similar course taught at any time in the past, at Vanderbilt, other universities, or the Internet, is a violation of the Honor Code.
- **Laptops and cell phones are to be turned OFF and CLOSED during class.**

Please ask your professor (and not other students) if you have any questions regarding how the Honor Code applies to this course.

Readings

Required classpacks are available from Janet Sisco, room 230-F from Tuesday, March 6 through Friday, March 23 (7:30am – 3:30pm). The cost is $5.00. Note the rules for Classpacks – they are required and sharing access codes electronically is an honor code violation.

Additional readings are available online at no charge and are listed throughout the syllabus.

CORE READINGS:

The following readings will be useful throughout the course. It is never too early to review them and to refer back to them during the course.

(1) Global Reporting Initiative Guidelines Including Technical Protocol ("GRI")

https://www.globalreporting.org/resourcelibrary/G3.1-Guidelines-Incl-Technical-Protocol.pdf

Further details can be found on the GRI website for:

Human Rights: https://www.globalreporting.org/resourcelibrary/A-Resource-Guide-to-Corporate-Human-Rights-Reporting.pdf

(2) Introducing GS Sustain, June 22, 2007

This is a large document, however, it is full of graphs and not much text! The following sections are of particular value:

p. 4-11 overview of GS Sustain
p. 12-28 good overview of global ESG issues
p. 38-45 describes GS Sustain indicators in some detail (we will read this on 4/11)

(3) How to read a CSR Report (you will need to register & login in order to reach):
http://www.bcccc.net/index.cfm?fuseaction=document.showDocumentByID&DocumentID=1353

Good background information if this is new to you…

Bloomberg Essentials: Every student should have basic familiarity with how to use the Bloomberg terminals – focusing primarily on equity analysis. We will not spend class time on basic Bloomberg training and instead will assume that by the beginning of week 2, every student knows how to operate the terminal. One option is to go through the BESS training modules (basic training 1-4 & equities), take the exam and become Bloomberg Certified. Even if you do not take the exam and become certified, this is a useful introduction to Bloomberg. During class in week 2, we will obtain further training on the ESG Module of Bloomberg.

Class 1. (Monday, March 11) - Introduction to Course/ESG & Financial Performance

> **Required Reading:**
>
> CFA Institute, "Environmental, Social & Governance Factors at Listed Companies," pp. 1-16.
>
> ESG Metrics: http://www.naem.org/resource/resmgr/Docs/cp-data-gmtm-esg.pdf

Class 2. (Wed, March 13) - Driving Sustainability at Bloomberg

> **Required Reading:**
>
> (1) "Driving Sustainability at Bloomberg LP," HBS Case #9-411-025
>
> (2) Spreadsheet with Bloomberg ESG Factors (on Blackboard) – note this is a larger and more detailed list of the factors shown in Exhibit 2 of the case.
>
> **Discussion Questions (not to be handed in)**
>
> (1) How might you use Bloomberg data if you are a financial analyst at: (a) SRI fund, (b) mainstream investment bank, (c) pension fund.
> (2) Do you think Bloomberg should estimate data when it is not available? Do you think they should rank companies? What do you think about their ESG Disclosure score?
> (3) Look at the ESG metrics in the Spreadsheet provided in Blackboard and consider two industries: (a) Oil and gas extraction and (b) Cosmetics/Personal Care. For each industry, place at least 2 metrics from each category (E,S, & G) in each of these boxes and be prepared to discuss your reasons for placing them there, focusing on what you think the most significant risks and opportunities are in these industries. *NOTE: I do not expect you to do outside research for this assignment – it is meant to be an initial thought exercise only. You will have plenty of opportunities to do more indepth research on topics like this throughout the module.*

	Oil & Gas Extraction		Cosmetics/Personal Care	
	Risks	Opportunities	Risks	Opportunities
Currently priced by market - Environmental - Social - Governance				
Not priced by market - Environmental - Social - Governance				

Class 3. (Mon, March 18) – Introduction to Bloomberg ESG

In-class training by Anna Wall, SASB

Resources:
      Bloomberg ESG Manual (on Blackboard)

Class 4. (Wed, March 20) – Initial Analysis of ESG Data

Readings:

Oddo Securities – ESG Integration, HBS Case #9-111-085

Steve Lydenberg, Jean Rogers, and David Wood, "Industry-based Sustainability Reporting on Key Issues," Initiative for Responsible Investment at Harvard University, http://www.arup.com/Publications/From_Transparency_to_Performance.aspx

- o This is a key reference for this class. The early chapter is good background information for those not familiar with GRI and other reporting frameworks. However, for purposes of this class, you should focus on pages 10-14; and 18-26. You will be using the chart on page 29 for the group assignment due Wednesday.

Also, note you can refer to GRI pages 27-29 for Environmental Indicators.

Discussion Questions (not to be handed in):

(1) Compare Oddo Securities' approach to ESG analysis to that developed by Lydenberg et al. In what ways are the similar? Where do they differ? Do you see any advantages of one over the other?
(2) What do you think of the list of ESG factors that Oddo Securities used in assessing the Telecommunications industry? Would you exclude, re-weight, or add any?
(3) How would you compare the list of ESG factors used by Oddo versus Lydenberg?
(4) If you were a long-term investor, would you buy FT or BT? Why?

Class 5 (Mon, March 25) – Environmental Metrics

     Individual Assignment #1 (attached) – due at beginning of class.

Class 6 (Wed, March 27) – Follow-up & Introduction to Supply Chain Issues

     No readings.

Class 7 (Mon, April 1) – Environmental Ranking Exercise
     Background Resource (available on Blackboard):

     Robert G. Eccles Michael P. Krzus George Serafeim, "Market Interest in Nonfinancial Information," Harvard Business School Working Paper 12-018, September 22, 2011

     Thomas Singer and Matteo Tonello, Sustainability Practices: 2012 Edition," Research Report R-1493-12-RR (The Conference Board).

     Group Assignment #1 – due at beginning of class (attached)

Class 8 (Wednesday, April 3) – Governance Metrics

Readings:

     Report of the NYSE Commission on Corporate Governance, September 23, 2010: http://www.ecgi.org/codes/documents/nyse_cgreport_23sep2010_en.pdf (read p. 1-7, 24-31).

     Lucian Bebchuck, Alma Cohen, and Allen Ferrell, "What Matters in Corporate Governance?" Harvard Law School Discussion Paper 491, September 2004. Available at: http://paper.sssrn.com/abstract_id=593423. (read pages 1-13)

Individual Assignment #2 – due at beginning of class (attached)

Class 9 (Monday, April 8)

     Guest Speaker: Jonathan Naimon, Green Light Advisors

Class 10 (Wednesday, April 10) – Portfolio Analysis

     Guest Speaker – Tim Barbis (OGSM, 2013!)

     Group Assignment #2 – due at beginning of class (attached)
        Note: The assignment is for next week's readings on Social Metrics:
            GRI: pages 29-39.

Class 11 (Monday, April 15) – Social Metrics

    Discussion of Group Assignment #2 and last week's speakers.

Class 12 (Wednesday, April 17) – Risk Analysis

    Reading: RiskMetrics April 2009 Report on BP PLC

    Group Assignment #3 – due at beginning of class (attached)

Class 13 (Monday, April 22) – Valuation

    Readings:

    Unicredit, "The Halo's Creed," November 5, 2010 (pages 2-13); also review pages 30-50 for selected details on the KPI definitions.

    ESG Valuation Tool
        Note: You can review the spreadsheet and underlying assumptions by going to the sample in Blackboard (see "Help" and "About" tabs). To access this feature live in Bloomberg, go to XLTP and scroll down to the ESG Valuation Tool).

        S&P Industry Survey for Chemicals, November 2012 written by Leo Larkin (available through Owen Library – S&G NetAdvantage – Industry Reports – Chemicals)
        http://www.netadvantage.standardandpoors.com/NASApp/NetAdvantage/showIndustrySurvey.do?code=che

    Discussion Questions:

    (1) Do you agree with the inclusion of the 13 KPIs in the valuation model that Unicredit has proposed? If not, what additions or subtractions would you propose?
    (2) What if any changes would you make to the values given to the KPIs?
    (3) Which of these do you think the market already accounts for? Fully? Partially?

Class 14 (Wednesday, April 24) - Class Project Draft Presentations

    Each group will be given time to present their project as a draft for feedback from the entire class. You should feel free to use this opportunity to test out ideas, look for suggestions, etc. I will not grade this presentation – instead, it is a learning opportunity for all. The final project is due at the end of exam week.

Class Schedule – Financial Analysis of ESG Data

	Date	Notes	Deliver-ables	Readings/Cases
1.	M 3/11	Course overview	---	CFA Institute; NAEM
2.	W 3/13	Bloomberg ESG	---	Driving Sustainability at Bloomberg; Bloomberg spreadsheet
3.	M 3/18	Bloomberg training	**---**	**Guest Speaker: Anna Wall (SASB)**
4.	W 3/20	Analysis of ESG Data	---	Oddo Securities; Lydenberg et al.
5.	M 3/25	Environmental Metrics	**IND #1**	
6.	W 3/27	Follow-up w/BB, Supply Chain, etc.	**---**	(note: might be good to read ahead and begin group project!)
7.	M 4/1	Environmental Rankings	**GRP #1**	Eccles et al. Singer & Tonello
8.	W 4/3	Governance Metrics	**IND #2**	NYSE Bebchuck, Cohen & Ferrell
9.	M 4/8	**Guest Speaker**	---	**Jonathan Naimon, Green Light Advisors**
10.	W 4/10	Portfolio Analysis: **Guest Speaker**	**GRP #2**	GRI **Tim Barbis (OGSM)**
11.	M 4/15	Social Metrics	**---**	
12.	W 4/17	Evaluating Risk	**GRP #3**	RiskMetrics Report on BP
13.	M 4/22	Valuation Models	**---**	Unicredit, Halo's Creed S&P Industry Survey for Chemicals ESG Valuation Tool
14.	W 4/24	Wrap Up	**---**	**Project discussion (NOTE: Projects due during exam week)**

Additional Readings:

Cheng, Beiting , Ioannou, Ioannis and Serafeim, George, **Corporate Social Responsibility and Access to Finance** (May 19, 2011). Harvard Business School Research Paper No. 1847085. Available at SSRN: http://ssrn.com/abstract=1847085.

- Note: uses ASSET4 ratings but doesn't give a lot of details on metrics; rather technical, but has interesting story on "access to capital."

Robert Daines**,** Ian D. Gow, and David F. Larcker, **Rating the Ratings: How Good Are Commercial Governance Ratings?** , *Journal of Financial Economics* 98 (December 2010): 439–461. Working paper available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1152093

Paul C. Godfrey, Craig B. Merrill, and Jared M. Hansen, "**The relationship between corporate social responsibility and shareholder value: an empirical test of the risk management hypothesis,**" *Strategic Management Journal* 30 (2009): 425-445

Park, Sojung Carol and Moon, Jon Jungbien, **How Much Does It Pay to Be Socially Responsible**? (January 21, 2011). Available at SSRN: http://ssrn.com/abstract=1760632.
　　　- explains how one can construct an industry balanced portfolio of S&P 500

Robert G. Eccles, Ionnis Ioannou, and George Serafeim, **"Impact of a Corporate Culture of Sustainability on Corporate Behavior and Performance,"** Harvard Business School Working Paper 12-035, November 4, 2011.

- Appendix lists qualitative factors used in classifying high versus low sustainability culture companies (although they go beyond the data and interview corporate folks, etc.). Nice explanation of how they go across ES&G to arrive at composite culture.

Haas Socially Responsible Investment Fund, Annual Report, May 2011 (p. 4-5)
- framework for analyzing individual company based on Zadek and others

Individual Assignment #1

1. Using Bloomberg EQS, identify the 100 largest New York Stock Exchange stocks.

    (a) Which company has the highest overall Bloomberg ESG Disclosure score?
    (b) Which company has the overall lowest Scope 1 GHG emissions per dollar revenue?
    Which has the overall lowest Scope 1+2 GHG emissions per dollar revenue?
    (c) Which company has the overall highest water usage per dollar revenue?
    (d) For each of the three companies you identified above, do a peer analysis to determine
    how it compares to others in its industry, using Bloomberg Peers (In each case, compare
    to at least 5 other companies in its industry.)
    [For discussion purposes only: Why do you think these companies might vary on these
    three dimensions?]

2. Using EQS, narrow the search to actively traded companies (on any exchange globally) in the Electric Utilities industry. Determine the top 25 companies in terms of Market Cap (for the most recent year available). Only a small number (<10) will have adequate data to answer these questions:

    (a) Which of these companies report Scope 1 GHG emissions? Which report Scope 2
    GHG emissions?
    (b) Rank the companies by (i) EBITDA, (ii) GHG1/dollar revenue, and (iii) Scope 1+2
    GHG/dollar revenue.
    (c) Assume an international carbon tax is established and the price per ton of carbon
    emissions is set at $23 and applies to Scope 1 emissions only. Calculate EBITDA for
    these companies. Does the ranking change? How important would this carbon tax be for
    these companies? Which if any are you concerned about as an investor?

3. Using EQS, narrow the search to actively traded companies globally in the Cosmetics/Personal Care Products industry with a market cap greater than $5 billion.

    (a) What percent of these firms are GRI reporters? Do any of them us an assurance
    auditor for their ESG report? What percent are members of the Global Compact? Have
    environmental or social supply chain management policies?
    (b) Assume that "N.A." is the same as a "no" or 0. Break the sample into three categories:
    (i) those who have most of the above, (ii) those who have one or two, and (iii) those who
    have none of the above.
    (c) Compare some of the financial and nonfinancial data in Bloomberg for those in
    groups (i) and (iii). Do you see any patterns? How might you advise companies in
    category (iii)? Do you think a case might be made for moving to category (i)?

Individual Assignment #2

(1) Review the available list of governance factors in Bloomberg ESG. Which of them most closely correspond to the governance factors that Bebchuck and the NYSE report identify as being important? How good a fit are they? You might provide a chart like this:

NYSE	Bebchuk ?	Bloomberg ?
Indep. Directors	Not included	% Indep (but NYSE says some non-indep directors are good – not sure what cutoff should be)

(2) What are the main differences in the approaches taken by the NYSE report and the Bebchuck paper?

(3) If you had to come up with a list of your top 5-10 ESG Governance metrics to screen companies, which would you use and why?

Group Assignment #1

Analyze the environmental performance of the 10 largest firms (using market cap as the screening criteria) in the Electric Utilities Industry based on the KPIs identified in Lydenberg, et al. (page 29). Identify the factors (if any) in Bloomberg ESG that best capture the six material environmental KPIs for this industry. For each KPI, list the Bloomberg factor(s) that can be used to approximate these KPIs.

(1) Which of these KPIs represent risks versus opportunities for companies in this industry?

(2) Do you think the Bloomberg ESG adequately captures these KPIs? If not, what is missing? Would you add any Bloomberg ESG factors that you think are important that are not included in the Lydenberg et al. study?

(3) Are there important Bloomberg ESG factors where data is too sparse to make meaningful comparisons across the industry?

(4) How would you weight the Bloomberg ESG factors you identified? Given this weighting, how would you rank the companies in the utilities industry on environmental issues?

(5) How does your ranking compare to the Newsweek Green Rankings (http://www.thedailybeast.com/newsweek/features/green-rankings/2011/international.html); and why are there differences if any? (PS: You can see their methodology at: http://www.thedailybeast.com/newsweek/2011/10/16/newsweek-green-rankings-2011-full-methodology.html

Group Assignment #2

Consider the Electric Utilities industry again (or choose another industry if you prefer). Add what you believe to be important social metrics that were not included in your earlier analysis. Be prepared to present your results in class.

(1) What metrics have you chosen and why? How are they weighted in your ranking?

(2) How does this change your rankings, if at all?

(3) Are there any important social metrics missing from Bloomberg that you would like to see? Explain why you would like to see them.

(4) Consider your governance metrics. Do you think that any of them might help to explain the environmental or social metrics for the firms you have analyzed? Explain.

Group Assignment #3 – BP

Review the 2009 Riskmetrics report for BP. Identify the key environmental and social indicators that Riskmetrics identified as being either a risk or opportunity for BP.

> (1) Using Bloomberg ESG, identify what you believe to be the most important ESG metrics to follow in this industry. If Bloomberg is missing something important, what would you like to see?

> (2) Compare BP with industry peers in 2009. How does BP compare on risks and opportunities? Do you see anything that might have been a warning sign for the impending BP Deepwater Horizon spill?

> (3) Why do you think that RiskMetrics gave BP an "AA" rating in 2009? Do you think they missed something?