Environmental, Social, and Governance (ESG) Criteria: Why Should Investors Care?

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Firms’ Objectives: Classical View

• Objectives of firms:
  • Engage in activities that maximize firm (shareholder) value
  • Abide by the laws and norms of the society
Environmental (E), Social (S), Governance (G), Criteria

• Environmental
  • Carbon emission, energy efficiency, climate change vulnerability, water stress

• Social
  • Health and safety, supply chain labor standards, controversial sourcing

• Governance
  • Competitive practices, financial stability, business ethics, shareholder friendliness
    • Reference: MSCI ESG Factors

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ESG Externalities

• Environment
  • A firm’s pollution output adversely affects all those in the economy
  • However the firm does not pay for creating pollution
  • This is a classic “externality”

• Social
  • Tobacco firms increase the public healthcare costs for which they do not pay
  • Creates a social healthcare cost for which the tax payers become liable

• Governance
  • VW diesel emissions scandal
  • VW benefited from bad governance (till it was found out)
  • Everyone else paid for it by breathing polluted air
ESG Externalities

• Externalities will eventually be internalized by firms through changes in the laws/regulation
  • Carbon emissions $\rightarrow$ global warming
  • Employment and sourcing practices $\rightarrow$ social unrest
  • Lending practices $\rightarrow$ systemic risk

• How the firm scores on various ESG criteria
  • Should the firm’s investors care so long as the firm abides by the laws?
Do Investors Care?

• A broad set of sustainable investment criteria that are used alongside traditional financial criteria in selecting investments
  • Source: 2014 Global Sustainable Investment Review

• Growth of Asset Managers who mention ESG
  • AUM of $13.3 trillion in 2012 ➔ $21.4 trillion in 2014
  • 21.5% ➔ 30.2% of professionally managed assets in the regions covered
  • Source: 2014 Global Sustainable Investment Review

• Investors seem to care!
• Why should they?
Firm Value

- Determined by views about future cash flows
  - More than 70% of equity value is due to cash flows that occur well past 10 years in the future
  - Those cash flows likely to be significantly affected by changes in laws and regulations and socially acceptable business practices
Firm Value And Future Cash Flows

- Average future cash flows during the period 1926-2015
  - Invest $100 in the U.S. Stock Index, Collect cash dividends for next 10 years and liquidate
Firm Value And Future Cash Flows

• Distribution of average present value of the future cash flows from 1926-2015
  • Invest $100 in the U.S. Stock Index, collect cash dividends for next 10 years and liquidate
  • Present values computed at the Internal Rate of Return (average IRR = 10.83%)
Future Cash Flows Over A Long Horizon

• Difficult to predict cash flows over such a long horizon

Invest in well-managed firms in good businesses which are in a better position to adapt to changing business conditions and likely to last longer, and reasonably priced

• Conjecture: Firms that do better along ESG dimensions
  • In a better position to successfully adapt to changing business conditions

• Firms’ ESG scores may help assess the value of the firms better
Example 1: Palm Oil
Palm Oil in Indonesia

- Palm oil production is growing
- Indonesia and Malaysia are the largest producers
Environmental Impact of Palm Oil

• Palm oil has supported economic development, but with global environmental costs...

• “Palm oil giants are accused of displacing local communities from their land and livelihood, opening up massive peat swamps with road building and forest clearance and installing extensive networks of canals. The lowering of the water table by peat canals dries out the land and allows fires to burn in areas where they would never naturally occur.” - The Guardian
Environmental Impact of Palm Oil

37% of Indonesian emissions are from deforestation; and 27% are from peat fires linked to deforestation, including for palm oil

Source: Rainforest Action Network 2010, Page et al. 2011, and Aiken 2010

Source: NASA
DAILY EMISSIONS FROM INDONESIA FIRES EXCEED THOSE OF U.S. ECONOMY

Average Daily GtC Emissions from Indonesian Fires (in CO2 t day⁻¹)

Average Daily Emissions Below U.S. Daily Emissions (Indonesia Fires)
Average Daily Emissions Above U.S. Daily Emissions (Indonesia Fires)
Average Daily Emissions (Total US economy)

SOURCE: GLOBAL FIRE EMISSIONS DATABASE and CAIT

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Policy Responses to Climate Change

• Costs of climate change are very high (mass migrations, sea level rise, agricultural disruptions)

• Governments will respond to reduce emissions

• Matter of when, not if
Unilever & Palm Oil

• Unilever accounts for, “5 million tonnes or approximately 8% of global palm oil production”
  • Source: “Transforming the palm oil industry”, Unilver.com

• Committed to ZERO deforestation in the value chain by 2019
  • Most ambitious private commitment yet, and others followed suit

• Ensures respect for local peoples’ land rights

• ...and appears to bank on this being a profitable strategy. Why?
Possible Regulatory Changes

A plausible future scenario:

• In the year 2021, massive international and local pressures cause Indonesia to ban deforestation for palm oil, and the government deploys drones and remote sensing technology to rigorously enforce these bans

• Firms like Unilever will have contracts with producers who are using sustainable methods and not responsible for deforestation, while competitors may not

Competitive edge from supply chain in the new regulatory environment? Expect higher future cash flows, but lower near term cash flows?
What Does This Mean for Investors?

• More environmental regulation is coming
• Not unique to palm oil – will impact oil & gas, energy, agriculture, services, etc.
  • Some firms anticipate these new regulations and prepare to adapt, and some do not
• Firms that are prepared are likely to have a competitive edge when regulation catches up, giving them:
  • Superior expected future cash flows, and lower risk
  • Higher current value, even if investors’ required return does not change
• Expect analysts to take this into account when valuing firms
Why Environmental Regulation May Happen

• We only have one “Atmosphere” and one “Earth”

• According to some studies
  • If we delay mitigation efforts for 15 years, the cost of mitigation will more than triple
  • If the worst fears come true, the welfare loss may be equivalent to a fall of World GDP/Consumption by a third!

• Regulation will happen
  • When is not clear
Question for Discussion

• Firms that do well along the ESG dimension
• Will they earn a higher or lower “risk adjusted” returns on average?
• Why?
Example 2: Financial Crisis
Period Preceding the Financial Crisis

• Financial Firms:
  • With hindsight we know that some firms engaged in lending practices that contributed to the financial crisis (worse governance)
  • Expect such firms
    • To have benefited from risky lending more than peers
    • Leading to better stock market performance prior to crisis
  • Performance relative to each other during and following the crisis
    • Other things not equal, so difficult to compare
Period Preceding the Financial Crisis

• Non financial firms
  • Expect firms with better governance to have had better stock market performance, preceding the crisis and later (why?)
    • If the market did not fully price better governance into account
  • The patterns we find are consistent with this conjecture
    • However, could be due to chance as well, since we have only one episode
Gompers, Ishii and Metrick (GIM) Governance Index (QJE, 2003)

• Corporate Governance Index designed to measure shareholder rights
• Different objective than the MSCI Governance Index, which is designed to measure financial stability, monopoly behavior, etc.
• GIM find a strong relationship between their governance measure and future returns
• GIM data is from 2000 (no look-ahead bias)
• Sort into two portfolios – above/below median governance score
Financial Firms

Finance, Insurance and Real Estate

Gompers et. al. Governance Score (Value-Weighted Returns)

Stock prices normalized to 1.00 at the beginning of the period

Average score for those below median: 6.67, for those above: 11.18

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Non Financial Firms

Excluding Finance, Insurance and Real Estate
Gompers et. al. Governance Score (Value-Weighted Returns)

Stock prices normalized to 1.00 at the beginning of the period

Average score for those below median: 6.45, for those above: 10.76
Do Fund Managers Use ESG Scores?
Use of ESG Criteria

• Active fund managers
  • Assess firms’ long run cash flows based on their own models
  • Will use ESG criteria when it helps assess future cash flows
  • Changes in holdings will be positively correlated with ESG rating changes if ESG ratings consistent with ESG and other criteria fund managers use

• Passive fund managers
  • Will use ESG criteria only if mandated

• Examine holdings of Active and Passive Fund Managers of Lumber Liquidators Inc. (LL)
  • Before, during, and after press coverage of product safety issues
Mutual Fund Holdings Data from CRSP

• Identify Passive Funds as in Pastor, Stambaugh and Taylor (2014)
  • Classified as an Index Fund by CRSP (fund objective)
  • Also add all funds whose name contains “Index”

• Active Funds
  • Not classified as Passive by above criteria

• Restrict to Equity (E) Funds

• Look at holdings of LL shares. Expect to find
  • Changes in holdings of active funds more positively correlated with changes in ESG ratings than changes than holdings of passive funds
  • Changes in active funds’ holdings to anticipate changes in ESG ratings
Lumber Liquidators’ (LL’s) Shares: Active and Passive Funds’ Holdings Over Time

LL price and S&P index normalized to equal $1.00 at the beginning
Measuring ESG Performance

Type I and Type II Errors Associated With ESG Scores
Type I and Type II Errors

• Do ESG scores measure what they are supposed to measure?

  • Think of a hypothesis test: Null is that the firm is “bad” and reject the null to classify the firm as “good” if you see a good score.

  • Type I error: Reject the null when the firm is actually “bad”

  • Type II error: Fail to reject null when firm is actually “good”
Type I Error

- Wachovia had a good MSCI governance score, but after the financial crisis they were downgraded and went out of business
  
  - December 2008 Overall “A” score, industry adjusted score of 6.74
  
  - Downgraded to “CCC” and industry adjusted score of 0.4 in January 2009
Type II Error

• Berkshire Hathaway had low MSCI governance score, but we know it is a well managed company

  • Started with a “CCC” score, industry adjusted score of 0 in January 2007

  • Steadily upgraded to “A” by 2011, industry adjusted score of 7.08
ESG Measurement Difficulties

• Globalization has made it difficult to measure ESG impact of a corporation
  • 1992: all of Timberland’s footwear was manufactured in “owned” factories
  • 2013: 96% of Timberland’s emissions are considered “beyond” the scope of Timberland’s reported footprint


• Jo Cofino, “97 percent of companies fail to provide data on key sustainability indicators.” - *The Guardian*, October, 2014
ESG Measurement Difficulties: Banks During Financial Crisis

• Start with banks acquired or bankrupted during the Great Recession
  • Source: https://en.wikipedia.org/wiki/List_of_banks_acquired_or_bankrupted_during_the_Great_Recession

• Match to MSCI ESG data (GIM index ends in 2000)
  • Find 23 firms of interest

• Take ratings as of January, 2007
  • First bankruptcy is April, 2007

• The Industry Average column reflects the average score for all firms in the same IVA industry as of January, 2007

• Institutions that went bankrupt had higher than average MSCI overall scores
<table>
<thead>
<tr>
<th>Company</th>
<th>IVA Industry</th>
<th>Overall Score</th>
<th>Industry Adjusted</th>
<th>Industry Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dexia</td>
<td>Banks - Europe</td>
<td>AAA</td>
<td>9.84</td>
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## Bankrupt/Acquired Firms with Below Average Overall Score

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Conclusion

• Firms: Maximize value and abide by the rules of the society
• Value: Depends on perceived future cash flows
• Cash Flows: Occur over long periods of time, depend on future rules
• ESG Criteria: May help investors assess a firm’s ability to survive
  • And, better assess a firm’s long term cash flows

• Policy Implication
  • Standardized reporting to minimize duplication of information gathering efforts by investors