A Shifting ESG Materiality Matrix: What Has Mattered, What May Matter

- A More Nuanced View. As we continue our research on sustainability factors that play a role in market outcomes, we embrace a more nuanced view. ESG factors that impact different sectors are not static, and are determined by a wide range of lifecycles.

- An ESG Materiality Matrix. In a recent report, ESG in Sector Strategy: What’s Material?, we plotted the likelihood of material sustainability issues against the potential financial impact of ESG events, creating a “Materiality Matrix.” We now expand on that analysis.

- An ESG Lifecycle. Another Cornerstone report, The Networked Corporation, introduced the concept of sustainability-related lifecycles. For most sectors, the likelihood of adverse ESG events and their potential financial impacts evolve through a lifecycle. ESG lifecycles determine the time it takes for a sustainability issue to become relevant to a sector as well as the magnitude of the financial impact.

- A Shifting ESG Materiality Matrix. Reflecting various ESG lifecycles, sectors move around the Materiality Matrix over time, which can draw attention to sustainability issues with investment significance, e.g., Financials prior to 2007-08 crisis.

- Sector Strategy Implications. Today, the risk is that the majority of sectors shift to, or remain at, unfavorable positions in the Materiality Matrix. Our overweight of the Financials sector is reinforced by its current relatively favorable position in the Matrix.

Figure 1: A Stylized Shifting ESG Materiality Matrix

Source: Cornerstone Capital Group
ESG in Sector Strategy: What’s Material?

When we introduced the Cornerstone Capital Sector Strategy Model in the May 2014 edition of The Journal of Sustainable Finance and Banking, we included a number of basic environmental, social and governance (ESG) metrics. We also highlighted the dynamic nature of the model, and emphasized that factors and factor weightings would be reviewed frequently.

Subsequently we developed an “ESG Materiality Matrix” for the majority of the MSCI GICS (see ESG in Sector Strategy: What’s Material?, June 23, 2015):

- The Sustainability Accounting Standards Board (SASB) has been steadily creating sustainability accounting standards on an industry-by-industry basis for the entire U.S. economy. SASB creates unique “Materiality Maps”™ for dozens of industries. In these maps, sustainability issues are assigned scores based on a number of factors, including evidence of financial impact.

- Separately, RobecoSAM adopted a two-step approach to help identify the financial materiality of sustainability issues in 59 different industries. In the first step, the most important intangible factors were identified for each industry. In the second step, the factors were prioritized according to (i) their expected magnitude (i.e. degree of impact) and (ii) the likelihood of their impact.

- Leveraging the approaches of SASB and RobecoSAM, we created a two dimensional materiality matrix for MSCI GICS using the most recently available data — Figure 2. (While the “ESG Materiality Matrix” can be used to identify relative ESG risks or opportunities at the sector or industry level, we focused on relative ESG risks at the sector level.)

Figure 2: Current ESG Materiality Matrix for MSCI GICS

Source: Cornerstone Capital Group

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Figure 2 suggests that the relationship between the probability of an ESG event and its financial impact is linear — an R-squared of 0.66. In other words, the higher the likelihood of an adverse ESG event in a sector, the greater the potential financial impact of that event on the sector.

**Recurring ESG “Lifecycles”**

As noted, the ESG Materiality Matrix illustrated in Figure 2 is based on the most recently available data. However, as John Wilson, Cornerstone Capital’s Head of Corporate Governance, Engagement & Research, recently pointed out:

- Social and environmental issues evolve through a “lifecycle” as awareness of the issue grows and social norms emerge...

We originally introduced the concept of sustainability-related lifecycles in our July 29, 2015 report *The Networked Corporation*. Just as the awareness of ESG issues is not static and evolves through a lifecycle, so too does the impact of adverse ESG events in different sectors.

- In the emerging, or “pre-financial” phase of an ESG lifecycle, a shift (subtle or overt) commences that ultimately has environmental, social and / or governance consequences for a sector.

- In the “transitional” phase, the ESG shift becomes increasingly visible, but neither its timing nor its ultimate financial impact are particularly clear.

- In the ultimate phase of the lifecycle — the “financial” phase — the full financial impacts of the ESG event are felt.

By way of example, even as the seeds of the 2007-08 financial crisis were being sown by lax governance (the “emerging” phase), in 2006 the IMF stated that:

- There is growing recognition that the dispersion of credit risk by banks to a broader and more diverse group of investors, rather than warehousing such risk on their balance sheets, has helped make the banking and overall financial system more resilient...Consequently the commercial banks may be less vulnerable today to credit or economic shocks.

In a 2009 post mortem after the “ultimate” phase, Nobel laureate Joseph Stiglitz observed that:

- Clearly, the most important blame [was] with the financial institutions that didn’t manage risk and the regulators who didn’t ensure that the banks did what they were supposed to.

The 2007-08 crisis wasn’t the first to be caused by lax governance and surely won’t be the last, which underscores the concept of recurring ESG lifecycles.

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1 Volkswagen: A Case Study in Failed Governance — 25 Sep 2015
2 IMF Global Financial Stability Report, April 2006

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A Shifting ESG Materiality Matrix

To help understand ESG lifecycles — and better incorporate an ESG Materiality Matrix into sector strategy — we have attempted to recreate a “shifting” ESG Materiality Matrix for MSCI GICS (Figure 3).

Figure 3: A Stylized Shifting ESG Materiality Matrix

To be sure, Figure 3 is not an illustration of what actually happened in recent years. That said, the key purpose of Figure 3 is to highlight that ESG factors which impact the different sectors are not static, and are determined by a wide range of lifecycles.

- The methodology behind the plot points in Figure 3 is outlined in our June 23, 2015 report ESG in Sector Strategy: What’s Material? The Utilities and Consumer Discretionary sectors are the two GICS not included in Figure 3. SASB plans to complete its analysis of the Utilities sector by March 2016, which will then enable us to incorporate that sector into the Materiality Matrix. As for the Consumer Discretionary sector, it is the most diverse of the ten GICS — SASB includes the GICS’ three largest industries (Automobiles, Retailers, Media) in three separate sectors (Transportation, Consumption, Services). It’s because of this heterogeneity that it’s not possible to make broad generalizations about the sector’s ESG lifecycle. By contrast, the Industrials sector (discussed below) is relatively homogenous, with SASB including all its major industries in the “Resource Transformation” sector.

- For historical comparisons we examined the period 2006-14 and, for each sector, we highlighted the year with the estimated plot point that differed the most from the current plot point. Our rationale for doing this was to highlight the degree to which ESG risk can evolve over time.
For each sector we identified the key variables that determine the *current* plot points and then quantified those factors historically in order to generate a time series of plot points. So, for example, greenhouse gas (GHG) emissions and water consumption are *currently* key ESG variables in the Materials sector. Therefore, we calculated the sector’s emissions / consumption trends annually since 2006, and then utilized the linear relationship between ESG factors and financial impact outlined above.

The curved lines linking prior years to the current plot points are intended to convey that movements of sectors in the matrix over time are *not necessarily linear*, reflecting unique ESG lifecycles. So, while the plot point of the Energy sector is lower today than it was in 2009, it is possible that, in the intervening years, a plot point was either higher than in 2009 or lower than it is today. That said, we pointed out above that ESG lifecycles in most sectors seem to follow the same pattern of (i) an “emerging” phase, (ii) a “transitional” phase and, ultimately, (iii) a “financial” phase.

As we discuss below, there are three exceptions to the ESG lifecycle hypothesis. First, the ESG risk profiles of the Materials and Industrials sectors are fairly consistent, with variance being driven by macroeconomic conditions. Second, the position of the Information Technology sector in the ESG Materiality Matrix seems to be relatively stable.

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Factors Behind a Shifting Materiality Matrix

Below we outline specific sector ESG lifecycles in the Materiality Matrix. Figure 4 summarizes ESG risks and metrics by sector.

### Figure 4: ESG Risks and Metrics by Sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>ESG Risk</th>
<th>Drivers of ESG Risk</th>
<th>ESG Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cons. Staples</td>
<td>Environmental, Social</td>
<td>Water Usage, Health &amp; Nutrition</td>
<td>Water Management</td>
</tr>
<tr>
<td>Energy</td>
<td>Environmental</td>
<td>Oil Price</td>
<td>GHG, NOx, SO2 Emissions, Water Management</td>
</tr>
<tr>
<td>Financials</td>
<td>Governance</td>
<td>Risk Management</td>
<td>Tier 1 Common Equity &amp; Capital Ratios, Leverage Ratio</td>
</tr>
<tr>
<td>Health Care</td>
<td>Governance, Social</td>
<td>Product Safety, Affordability</td>
<td># of Drug Fatalities, Drug Price Inflation</td>
</tr>
<tr>
<td>Industrials</td>
<td>Environmental</td>
<td>Global Economic Cycle</td>
<td>Energy Usage, Waste Discarded, NOx Emissions</td>
</tr>
<tr>
<td>Info Tech</td>
<td>Social</td>
<td>Data Privacy &amp; Security, Human Capital</td>
<td>Confirmed Data Breaches, Employee Turnover</td>
</tr>
<tr>
<td>Materials</td>
<td>Environmental</td>
<td>Global Economic Cycle</td>
<td>GHG, NOx, SO2 Emissions, Energy Consumption</td>
</tr>
<tr>
<td>Telecom</td>
<td>Social</td>
<td>Data Privacy &amp; Data Security</td>
<td>Confirmed Data Breaches</td>
</tr>
</tbody>
</table>

Source: Cornerstone Capital Group

- Our analysis suggests that, in contrast to other sectors, the ESG risk profiles of the Materials and Industrials are fairly consistent. For both sectors, the key ESG factors are *environmental* in nature: Air quality, energy management, GHG emissions, etc. By our estimation, environmental factors currently account for 75% of the ESG variables of relevance in the Materials sector and 43% of the ESG variables in the Industrials sector, which are relatively large proportions when compared to most other MSCI GICS — Figure 5.

### Figure 5: Estimated Relevance of ESG Factor by Sector*

<table>
<thead>
<tr>
<th>Sector</th>
<th>Environmental</th>
<th>Social</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Staples</td>
<td>34%</td>
<td>30%</td>
<td>36%</td>
</tr>
<tr>
<td>Energy</td>
<td>81%</td>
<td>0%</td>
<td>19%</td>
</tr>
<tr>
<td>Financials</td>
<td>0%</td>
<td>15%</td>
<td>85%</td>
</tr>
<tr>
<td>Health Care</td>
<td>32%</td>
<td>33%</td>
<td>35%</td>
</tr>
<tr>
<td>Industrials</td>
<td>43%</td>
<td>7%</td>
<td>51%</td>
</tr>
<tr>
<td>Information Technology</td>
<td>16%</td>
<td>45%</td>
<td>39%</td>
</tr>
<tr>
<td>Materials</td>
<td>75%</td>
<td>0%</td>
<td>25%</td>
</tr>
<tr>
<td>Telecommunication Services</td>
<td>21%</td>
<td>47%</td>
<td>32%</td>
</tr>
</tbody>
</table>

* In this methodology, the boundaries between the three factors are somewhat fluid. So, for example, the Governance category includes “accident & safety management” and “supply chain management;” it could be argued that these should both fall under the Social category.

Source: SASB, Cornerstone Capital Group

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Of course, the Materials and Industrials sectors are highly cyclical in nature, so that their emissions of pollutants and consumption of environmental materials rise and fall with the global economy. It would seem, therefore, that the likelihood of an adverse and costly ESG event in the two sectors increases when the global economy is expanding rapidly and companies in the sectors are racing to increase output.

In the Energy sector, by contrast, Figure 3 illustrates that the likelihood of an adverse and costly ESG event is estimated to be lower today than was the case in 2009 (noting, once again, that we are not assuming the movements of sectors are linear over time). We calculate that, of all the sectors, Energy has the greatest sensitivity to various environmental factors (Figure 5), including water management, GHG emissions and air quality.

Of course, for the Energy sector the biggest difference between 2009 and today is the price of oil. Figure 6 illustrates that, whereas oil prices are low today after falling precipitously since the summer of 2014, in 2009 and thereafter they were rising steadily (apart from a period of decline around the time of the environmentally catastrophic BP Deepwater Horizon oil spill in 2010). The implication here is that rising oil prices (e.g., in 2009) prompt incremental exploration and production activities that may significantly increase the likelihood of an adverse environmental event (e.g., in 2010). A report\(^4\) commissioned by the Bureau of Ocean and Energy Management supports this hypothesis, as it found a linear relationship between the volume of crude oil production and the number of oil spills.


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In the Consumer Staples sector, *environmental* (e.g., water usage) and *social* (e.g., health and nutrition issues) factors are estimated to have almost equal importance. As outlined below, ESG risks in the sector seem to have *declined* in recent years.

While the Consumer Staples sector covers a range of industries — including Household and Personal Products, Processed Foods and Beverages — most of them consume water as part of their production processes. Against a background of global water scarcity, the sector’s consumption of water has declined steadily. Separately, a heightened consumer focus on health and nutrition issues has been driven by concerns about obesity, ingredient safety, and nutritional value, among other factors. In this context it would seem that the sector has taken steps to develop “healthier” products (with less sugar, fats, etc.) to address some of these issues.

The Telecommunication Services sector’s ESG risk has likely *increased* materially since 2008. We estimate that, of all the sectors, Telecom has the greatest sensitivity to *social factors* (Figure 5), with data privacy and data security being two key issues for this sector.

The explosive growth of the internet in recent years has solidified the position of the Telecom sector as a crucial provider of voice and data services. At the same time, however, hacking, cyber-attacks and other forms of internet crime have also increased; indeed, in 2011, the Securities Exchange Commission issued guidance to U.S. companies to disclose any material information on cyber-attacks or risks. Given these trends, a failure by the sector to protect the privacy and security of its customers’ information could potentially have a material financial impact.

After Telecom, the Information Technology sector has the second largest sensitivity to *social factors*. While data privacy and data security are also important for this sector, so, too, are human capital issues, most notably employee recruitment and retention.

In the stylized shifting Materiality Matrix illustrated in Figure 3, the current plot point of the Information Technology sector is slightly lower than its plot point in 2008 and is *in close proximity* to the current plot point for the Telecom sector. The implication here is that, for the Information Technology sector — and the large Software industry in particular — data privacy and data security have been critical issues *for many years*, as have factors pertaining to employee recruitment and retention. In sum then, the position of the Information Technology sector in the ESG Materiality Matrix seems to have been relatively stable.
In Health Care — where governance (product safety and quality) and social (product affordability and access) factors are estimated to have almost equal importance — ESG risks have likely increased in recent years.

With regard to product safety and quality issues, the number of fatalities associated with pharmaceutical products reported by the U.S. Food and Drug Administration doubled in the most recent five-year period. Separately, Interpol estimates that, in some areas of Asia, Africa and Latin America, counterfeit medical goods can form up to 30% of the market. As for product affordability and access, in many developed economies the rate of increase in the price of prescription drugs has exceeded the general inflation level, thereby increasing the risk of price regulation.

By contrast, the ESG risk of the Financials sector has likely declined in recent years. (Obviously, with the benefit of hindsight, the 2006 plot point for the Financials sector would have been in the top right quadrant of Figure 3.) As we noted above — and as Figure 5 illustrates — governance is by far the most significant ESG factor in the sector.

Following the financial crisis of 2007-08, regulatory scrutiny of the Financials sector globally has been ratcheted up considerably. The sector has had to adapt to much more stringent capital adequacy, stress testing and market liquidity risk standards. On top of this, in recent years major global banks have had to pay significant fines for various misdeeds, including inappropriate sales of mortgage bonds prior to the crisis, manipulating benchmark interest rates and lax money laundering controls. While financial and economic crises will continue to occur periodically, in the near term the development and implementation of regulations related to systemic risk management have likely improved the ability of the sector to absorb shocks.
Implications for Sector Strategy

Based on the analysis above, we draw four broad conclusions for sector strategy.

- In the near term, the Materials sector is vulnerable to potential ESG issues and their associated financial impacts, as is the Industrials sector, albeit to a lesser extent.

  As noted above, both sectors are highly cyclical in nature, so the likelihood of adverse and costly ESG events increases when the global economy is expanding rapidly. Today it would seem that most large developed economies continue to grow, while some emerging economies have been under pressure due to weakness in commodity prices. Going forward, if a rebound in commodity prices drives expansion in certain emerging economies, that could well contribute to an environment of synchronized global growth.

- There is a risk that the Energy sector shifts back to an unfavorable position in the Materiality Matrix.

  We pointed out that it seems that the price of oil is a key factor in the Energy sector’s ESG lifecycle. Some forecasters are calling for a rebound in oil prices from current levels in the near future.

- Reflecting burgeoning data privacy and data security issues, ESG risks / costs could become even more material for the Telecom and Information Technology sectors.

- ESG risks / costs could also increase for the Health Care sector albeit for different reasons, namely those pertaining to product safety / quality and product affordability / access.
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