

## Getting Better

### Shenkman Takes Steps to Support Disclosure

In the hopes of improving disclosure in ESG, Shenkman has signed on to support the Task Force on Climate-Related Financial Disclosures ("TCFD").

As climate issues have been gaining more attention, we are pleased to announce that earlier this year, we became a public supporter of the TCFD. This widely recognized organization encourages corporate disclosure, which is very much aligned with our views and processes. With a growing focus on climate related issues, we believe having access to reliable and consistent climate disclosures is vital to the investment research process. We look forward to continuing our engagement on climate-related issues.

**Mark R. Shenkman**

Founder & President

**Justin W. Statky**

Chief Investment Officer

**Bob S. Kricheff**

Portfolio Manager & Global Strategist

**Amy L. Levine, CFA**

Director of ESG

For more information, please contact:

**Richard A. Keri, CPA**

SVP, Head of Business Development &  
Investor Relations  
(212) 867 - 9090

[InvestorRelations@shenkmancapital.com](mailto:InvestorRelations@shenkmancapital.com)

### Scores Can Create Blinders

The struggle to define ESG investing appears to be pushing some people to the easiest methods to do so. Regulators also seem to be embracing this approach as they try to regulate ESG efforts and prevent "greenwashing." Examples of this path can include defining ESG by measuring carbon footprints (much of which can involve self-reporting) or using negative screens for certain industries. These approaches may be valuable tools to help achieve certain goals but may also create shortfalls that result in missing some of the risks and ignoring the benefits of engagement that a more inclusive approach to ESG may capture.

The risk is that an easy path may assume a few measurements or definitions based on a static figure taken at a specific "point in time," rather than focusing on the path a company may be taking and looking at the future. This is similar to basing an investment only on historical financial results and not on forward estimates. "Scores" can create an illusion of a false level of precision. If a score that is focused on a narrow definition becomes the defining focus of ESG efforts, it is an approach that could result in other related risks being overlooked in the investment process. This can be particularly true for future risks and in areas that are hard to measure, such as social concerns and governance risks.

In this report, we use the Internet Communications and Technology sector as an example of an industry where environmental risks can be overlooked if only simple scoring methodologies or negative screening are used. A report from a Swedish researcher released last year estimated these sectors could use 20% of global energy by 2025. This report appears on the aggressive side, and some reports from the 2015-2017 era underestimated technology advancements.

However, with the roll-out of 5G and expansion of cloud computing the industries energy usage will likely be rising and this highlights some of the environmental risks that may be overlooked from negative screens and other score systems.

### **Technology – Better than Coal but not perfect**

Technology driven industries are often viewed as "clean" industries, but below we point out several environmental concerns that must be considered when analyzing risk in the industry. Many of the major technology companies, such as Apple, Microsoft, Oracle and others have been very proactive about announcing ESG goals and on disclosures relative to many other firms through such things as Apple's Environmental Progress Report. However, one still should analyze other complex issues that could lead to increased costs or regulatory and legal challenges. Below are just a few consequences in the environmental space that need to be considered.

### **Manufacturing**

Many technology tools require natural resources that involve mining, which can significantly impact the environment. In particular, many new technologies require resources that involve mining of nickel and rare-earth metals.

The constant use and development of new batteries represents a significant user of natural resources, which includes the batteries used in electric cars that can be large consumers of nickel. Some reports expect demand for nickel to increase 10x by 2030 versus 2019. While some of the damages and risks to the environment are not as obvious, or perhaps not as easy to measure as fossil fuels, there are significant risks to the environment from solvent vapors and acid run-off that in particular can damage water supplies. Additionally, disposal of unused ore has been cited as a major issue. Growth in the demand for rare earth metals is also expected to multiply over coming years, and there is a broad array of concerns over environmental damage from mining, refining and waste related to these natural resources.

### **Product Lifecycles**

Perhaps one of the biggest environmental problems driven by the growing use of technology is e-waste, which has an impact on land and water resources. A UN study estimated that 7.3 kilograms of e-waste is created for every person on earth annually. Studies have shown approximately a 20% annual growth in e-waste from 2014 to 2019 with estimates of accelerating growth through 2030. While we found variations in studies, they imply that only 15-17% of e-waste is recycled.

Much of the waste appears to come from the introduction of new innovative products and the inability to update existing ones. In the U.S., one group estimated that the average mobile phone is now owned for an average of only two years. Few phones have replacement batteries available, so the whole phone must be replaced. Upgrades can result in the need for new chargers, cases, and headphones thus adding all of the old products to e-waste. The roll-out of new 5G models may accelerate the level of e-waste and developments such as the shift from wired headphones to wireless Bluetooth headphones, not only

are likely creating more waste but adding another device that requires electrical charging. New generations of wireless networks such as 5G also require greater density of small cells than earlier generations, and each additional cell requires a power source as well. Of course, these developments do not just occur with phones but with a plethora of computing devices.

### Data Storage

The digitization and value of data and the rapidly increasing use of cloud computing all utilize data centers. Data centers generally run equipment for networking, servers and storage. While projections in the U.S. for data center growth appear to be in the low single digits over coming years, on a global basis, growth is anticipated to be in a range from the mid-to-high single digit range. For example, one area of rapidly growing computing requirements is mining of digital currency, which is predominantly done outside the U.S.

Data centers require very high levels of electric energy to power the computers and especially to keep centers cool. Data center power usage has been a major environmental concern, and several reports have estimated the power usage at about 1% of global electric power needs. These reports have noted that through investment in more energy efficient technology, the industry's energy usage has stayed flat. But there are concerns that this usage will accelerate, especially outside the U.S.

With energy such a large part of costs, the industry is currently incentivized to be more efficient. However, the ability to become more energy efficient may decline and given the expected growth outside the U.S., usage of electricity powered by fossil fuels and higher CO2 emission may increase as the percentage of global data center electric power usage increases. For example, in the U.S. about 40% of electric energy generation comes from natural gas, 19% from coal, and 20% from nuclear. Natural gas, while being a fossil fuel generally has lower CO2 output than coal by about 43% in some estimates. In China, estimates were that in 2019, 58% of the energy was generated from coal, and another 20% from petroleum and other liquids.

While arguably less of a concern than energy usage, data centers are a considerable user of land resources as well. One source outlined that the average data center covers approximately 100,000 sq ft of ground in the U.S., but the largest center in 2018 was at Langfan in China and covered some 6.3 million square feet.

### ESG Analysis Leads to Engagement

We believe these examples about the technology industry highlight that simple negative screens and/or scoring on ESG factors does not always capture all ESG risks. Analysis has to be forward looking and can involve a certain level of subjectivity. The examples above focused simply on environmental risks. We believe the factors get even more complex when analyzing social and governance issues, which can cover everything from privacy concerns to treatment of employees. Additionally, the increase in companies with asset-light models that use a significant amount of outsourcing can create risks throughout the supply chain that can be even more complex to unravel. Interaction with company

managements on these topics is key and can be the critical point where engagement on these issues can occur. Simply using scores and negative industry screens can negate this point of contact.

All ESG analysis has to incorporate current data and forward-looking analysis to consider a multitude of possible consequences when making an investment decision. As a hypothetical view of forward-looking ESG analysis, one should consider which has more environmental risk, a gasoline (petrol) retailer that is looking to transition to electric charging stations or the data center industry that is likely to increase land use and double its electric usage over the next five years.

In no way does this mean that one should not focus on reducing CO2 emissions but to make sure that using just one or two ESG tools does not lead to ignoring a multitude of other risks.

We do worry that a rush to buy ESG services and ratings will reduce engagement within fixed income investing. Corporate disclosure of ESG information is critical to achieving better analysis. As companies move to models with more outsourcing and longer-supply chains, this analysis can become even more complex. We support efforts for more consistent and regular ESG disclosures and, of note, some technology related companies are first-movers in this arena.

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## OFFICES

## SHENKMAN CAPITAL MANAGEMENT, INC.

461 Fifth Avenue  
New York, NY 10017  
(212) 867 – 9090

262 Harbor Drive  
Stamford, CT 06902  
(203) 348 – 3500

## SHENKMAN CAPITAL MANAGEMENT LTD

49 St. James's Street  
London, UK SW1A 1JT  
+44 (0) 207 268 2300

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