

SUSTAINABILITY FOOTPRINTING AS A TOOL TO IMPLEMENT MISSION-RELATED INVESTING

How to use portfolio-level measures of sustainability to better align investment strategy and mission

Traditionally, philanthropic organizations have separated grant-making from endowment management. This article discusses how the concept of sustainability footprinting can be used to better align endowment management and philanthropic objectives.

1. INTRODUCTION

Typically, endowment management does not reflect the charitable objectives of a philanthropic organization. Rather, endowment management focuses predominantly on fiduciary aspects. Emerson (2003) refers to this separation as “firewalling” [1]. The rapid development of sustainable investing (see GSIA, 2015) [2] in combination with the advent of a new type of impact-focused philanthropist (see Goldseker and Moody, 2017 [3]; Morgan Stanley, 2014 [4]) have put this traditional separation into question. Some have even gone so far as to question whether foundations can pursue philanthropic goals without aligning endowment management and their broader mission: for instance, Victor de Luca, president of the Noyes Foundation noted that it “makes no sense to use 5% of [...] assets to try to promote something, while the other 95% might be doing something totally contrary” (see Emerson, 2003) [5].

Given that there is now an increasingly blurred line between traditional philanthropic endeavors and investments that seek financial returns alongside positive societal and environmental impact, there is a debate about whether philanthropic organizations should align their investment policies with their broader mission. The practice of reflecting mission in endowment management is known as *mission-related investing* (see Fritz and Schnurbein, 2015) [6] and could potentially be used to complement a foundation’s charitable activities. From a foundation’s perspective, mission-related investing has two attractive features: First, the same capital can be de-

ployed multiple times. Second, a larger amount of a foundation’s financial assets can be used to further its mission. Both features imply that foundations could potentially leverage their social and environmental impact by relying on mission-related investing, an aspect that might be particularly relevant in jurisdictions in which foundations do not have to comply with minimum giving requirements.

Sustainable investing – with its different forms of implementation, such as screening, shareholder engagement, thematic investments, and impact investing – offers a variety of tools to foundations and endowments that could potentially help implement such mission-related investing. CFA (2015) [7] or Krauss, Krueger, and Meyer (2016) [8] provide an overview of the most common forms of implementing sustainable investing. The present article discusses the concept of portfolio-level sustainability footprinting and how this sustainable investing technique can be used to better align a philanthropic organization’s stock investments with its overall mission.

2. THE SUSTAINABILITY FOOTPRINT OF A STOCK PORTFOLIO

In a recent research paper, Gibson Brandon and Krueger (2018) [9] propose a way of quantifying the overall sustainability characteristics of a stock portfolio. The idea of the sustainability footprint is to systematically quantify the environmental, social, and governance (ESG) characteristics of a stock portfolio. Much like the return on a stock portfolio, which is simply the weighted average return of the stocks that are contained in the portfolio, Gibson Brandon and Krueger (2018) posit that the sustainability footprint (or “*impact*”) of a stock portfolio can be measured as a weighted average sustainability score of the portfolio’s components.

The idea of the portfolio-level sustainability footprint is to have a single number that summarizes the overall sustainability of a stock portfolio. It is formally defined as

$$\text{Sustainability_Footprint}_t = \sum_{j=1}^{N_t} w_{jt} \times \text{Susty}_{jt}. \quad (\text{Equation 1})$$



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In this equation, w_{jt} denotes the portfolio weight of stock j in period t , the term $Sust_{jt}$ is the sustainability score of stock j in period t , and N_t is the total number of stocks that is contained in the portfolio in period t . The sustainability footprint is thus a combination of portfolio weights and stock-level sustainability scores. Just like a value-weighted portfolio return captures the average return of a portfolio's components, the sustainability footprint captures the aver-

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age sustainability score of the stocks that make up a portfolio. According to Equation 1, the sustainability footprint of the investor depends primarily on (i) the sustainability scores of the individual stocks in the investor's portfolio and (ii) the magnitude of the individual stock holdings. Most often, the stock-level sustainability scores are scaled in a way that higher values represent better sustainability outcomes. Thus, higher values for the sustainability footprint are more desirable.

3. MEASURING SUSTAINABILITY AT THE STOCK-LEVEL

As explained in the previous section, calculating the sustainability footprint of a portfolio requires information on (i) the portfolio weights of the different stocks held in a portfolio and (ii) the sustainability scores at the stock-level. Therefore, an important aspect in calculating the sustainability footprint of a portfolio concerns the choice of stock-level sustainability scores. Typically, the sustainability of a stock is measured using stock-level ESG scores. Two kinds of stock-level ESG scores exist. On the one hand, there are *conduct-based* scores, which quantify the ESG (or sustainability) characteristics of a company's operations. On the other hand, there are *product-based* sustainability scores, which quantify the extent to which the products and services of a firm are contributing towards sustainable development.

To measure a stock's sustainability, Gibson Brandon and Krueger (2018) use *conduct-based* ESG scores. These scores quantify the sustainability characteristics of the operations of a firm. As such, these scores measure, for instance, whether the management of a firm takes into consideration issues such as climate change, waste reduction, energy efficiency, human rights, minimum labor standards, or broader corporate governance aspects. Krauss, Krueger, and Meyer (2016) provide an overview of some of the most important ESG issues that are considered when determining such *conduct-based* sustainability scores.

Table 1: **STRUCTURE OF MSCI ESG SUSTAINABLE IMPACT METRICS**

Pillar	Themes	Categories
Environmental impact	Climate change	1. Alternative energy 2. Energy efficiency 3. Green building
	Natural capital	4. Sustainable water 5. Pollution prevention
Social impact	Basic needs	6. Nutrition 7. Major disease treatments 8. Sanitation 9. Affordable real estate
	Empowerment	10. Education

Source: MSCI

Instead of using *conduct-based* scores of the abovementioned type to measure the sustainability of a stock, an alternative approach consists of using scores that capture the sustainability characteristics of a company's products and services. Such *product-based* sustainability scores measure to what extent the products and services of a company are aligned with sustainable development. WCED (1987) [10] provides more context on the concept of sustainable development.

There are now increasingly *product-based* sustainability assessments which seek to quantify how a firm's products and services contribute to sustainable development. For example, the *MSCI ESG Sustainable Impact Metrics* [11] (see MSCI, 2018 [12]; Nishikawa and Menou, 2016 [13]) provide information on the fraction of a firm's total revenues that is derived from products and services that positively contribute to attaining the Sustainable Development Goals (SDGs). The SDGs, also known as the 2030 Agenda for Sustainable Development, are an intergovernmental set of seventeen development goals with 169 specific targets that were adopted in 2014 by the UN

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General Assembly. Broadly speaking, the SDGs address the major environmental and social challenges of our time (see United Nations, 2017) [14]. The goals are, for instance, concerned with reducing poverty, ending hunger, providing access to quality education and healthy living conditions, combating climate change, and protecting the natural environment [15].

The SDGs play an increasingly important role in policy-making and for that matter in investment management too. For instance, institutional investors are now seeking ways to analyze whether their portfolios are aligned with the SDGs. To this end, the *MSCI ESG Sustainable Impact Metrics* inform about the extent to which products and services of publicly listed firms relate to the issues defined by the SDGs. To pro-

duce such information, MSCI has created a mapping between products sold by publicly listed companies and the seventeen SDGs. More specifically, MSCI quantifies the share of a firm's revenues that is related to a specific SDG. The MSCI ESG Sustainable Impact Metrics are organized along a taxonomy of pillars, themes, and categories. Table 1 provides an over-

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view of the structure and topics covered by the MSCI ESG Sustainable Impact Metrics.

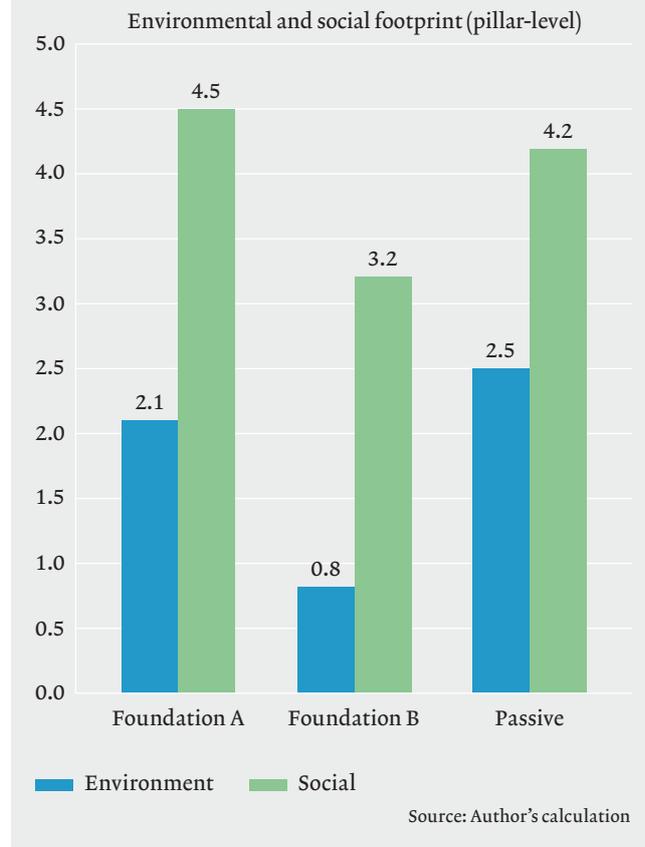
The basic idea of the MSCI ESG Sustainable Impact Metrics is to determine the extent to which the products and services of publicly listed firms are related to the issues captured by the pillars, themes, and categories shown in Table 1. MSCI provides an assessment of the percentage of a firm's total revenues that is related to each pillar, theme, or category.

The broadest assessment is at the pillar-level. It consists of measuring the percentage of a firm's total revenues that is related to the environmental or social issues captured by the SDGs. Within the social and environmental pillar, MSCI has identified specific impact themes. Hence, moving from pillars to themes, the assessment become more refined. For example, the climate change theme allows identifying if a firm derives revenue from products and services that help combatting climate change. Examples of such products and services would be the production or distribution of alternative energy and the provision of energy efficiency enhancing products and services. In a similar spirit, the natural capital theme allows identifying firms that offer products and services that help to protect natural capital, for instance, by preventing pollution or addressing water scarcity or quality issues. Within each theme, MSCI has defined even finer categories. For example, the social categories Nutrition (6.), Major disease treatments (7.), or Education (10.) allow identifying companies that derive revenues from providing basic nutritional products (e.g., sources of carbohydrates, fruits and vegetables, etc.), developing treatments for major diseases (e.g., HIV/Aids, depressive disorders, Malaria, Alzheimer), or selling education related products and services used in school environments (e.g., educational books).

4. USING THE SUSTAINABILITY FOOTPRINT TO IMPLEMENT MISSION-RELATED INVESTING

The idea behind mission-related investing is to align a philanthropic organization's endowment management with its mission. Portfolio-level sustainability footprints can help foundations to achieve this goal. Sustainability footprints provide information about whether an investment portfolio is aligned with certain social and environmental themes. For instance, a sustainability footprint calculated using MSCI's

Figure 1: **SUSTAINABILITY FOOTPRINTS AT THE PILLAR-LEVEL USING MSCI ESG SUSTAINABLE IMPACT METRICS**

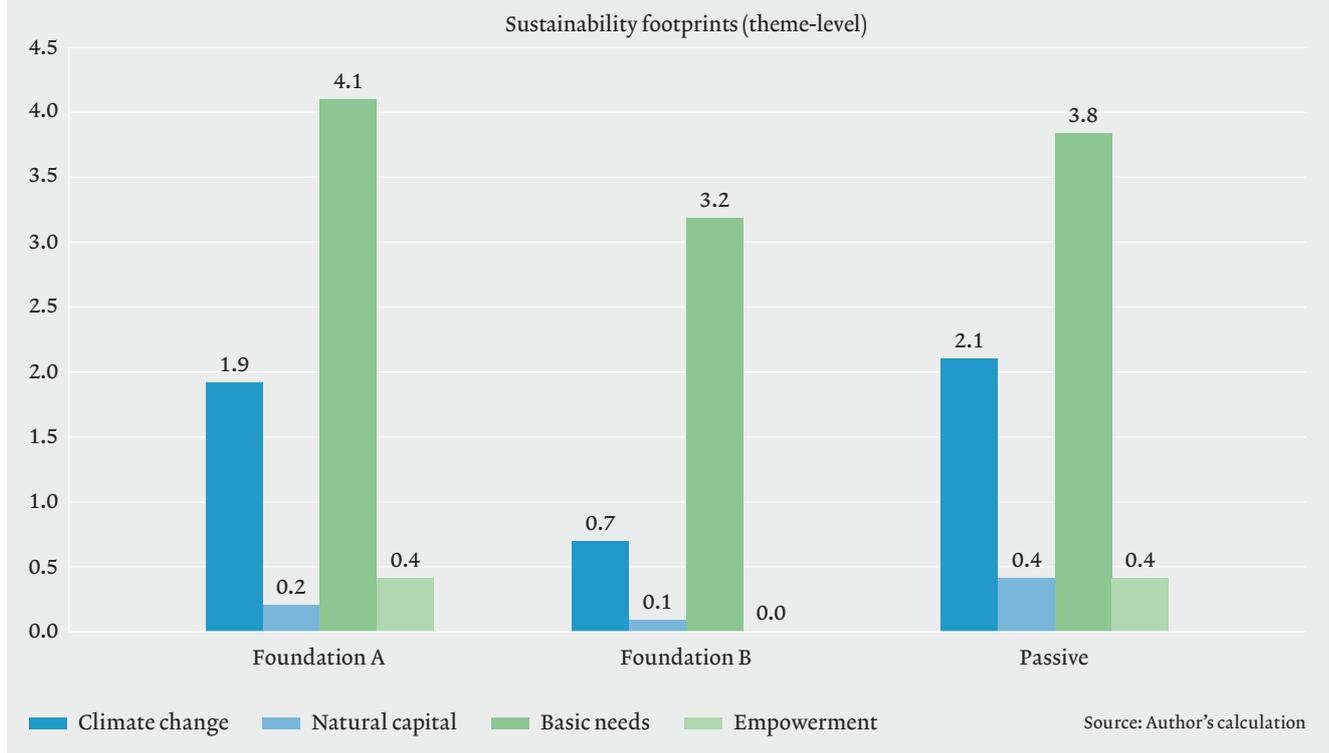


Social pillar score would allow a philanthropic organization to quantify the contribution of its portfolio towards the social objectives spelled out in the SDGs. A philanthropic organization with a social mission could thus use a sustainability footprint focusing on social aspects to guide its mission-related investment strategy. For example, a donor interested in fighting diseases might decide to allocate a larger fraction of invested capital to firms producing major disease treatments (Category 7. Major disease treatment; see Table 1). In a similar spirit, an environmentally oriented philanthropic organization could use a sustainability footprint calculated with MSCI's Environmental pillar score to examine the extent to which its stock portfolio contains firms that derive revenues from activities with positive environmental effects (see categories 1–5, Table 1). As another example, development or public health oriented philanthropic organizations might want to know to what extent their stock portfolios consist of firms that derive high revenue shares from products and services from MSCI's Basic needs theme, which captures issues such as nutrition, major disease treatments, or sanitation. All in all, the sustainability footprints can help to align endowment management with philanthropic objectives.

5. CASE STUDY

To further illustrate the concept of the sustainability footprint of a stock-portfolio and how it might be relevant for

Figure 2: SUSTAINABILITY FOOTPRINTS AT THE THEME-LEVEL USING MSCI ESG SUSTAINABLE IMPACT METRICS



an institution implementing a mission-related investment strategy, I now calculate sustainability footprints for two philanthropic organizations. The analysis is restricted to their direct stock holdings, mainly because data on their third-party managed investments are generally not publicly available [16]. In contrast, philanthropic organizations that own sizeable direct stock holdings are, due to regulatory requirements [17], obliged to publish the composition of their direct stock holdings on a regular basis.

In this case study, I use the direct stock holdings of two philanthropic organizations at the end of the fourth quarter of 2016. *Foundation A* is active in promoting and supporting research in the humanities and social sciences. *Foundation B* is a science oriented philanthropic organization with a mission to advance biomedical research and science education. In calculating the sustainability footprints for these two organizations, I use the *MSCI ESG Sustainable Impact Metrics*. In *Figure 1*, I present the sustainability footprints at the Environmental- and Social-pillar level for the two organizations alongside the sustainability footprints of a value-weighted passive global stock portfolio. The value-weighted passive stock portfolio simply invests in all available stocks, where the portfolio-weights are proportional to the market capitalization of the stocks.

Figure 1 shows that the firms contained in *Foundation A's* (*B's*) stock portfolio derive, on average, 2.1 (0.8)% of their revenues from products and services related to at least one of the environmental challenges defined by the SDGs. When it comes to social challenges defined by the SDGs, the numbers are 4.5% for *Foundation A* and 3.2% for *Foundation B*. In

other words, on average 4.5 (3.2)% of the total revenues of the firms contained in *Foundation A's* (*B's*) stock portfolio are derived from products and services that contribute positively to at least one of the social objectives of the SDGs.

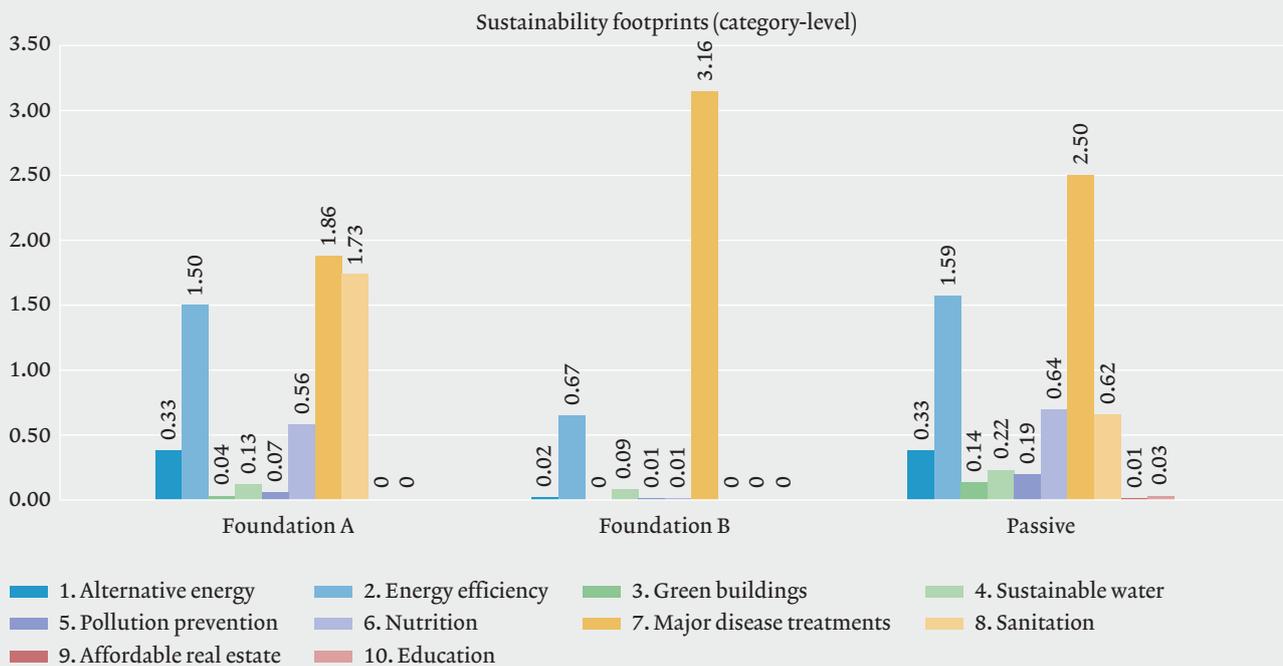
As a benchmark, *Figure 1* also displays the social and environmental contribution to the SDG's for the passive global stock market portfolio (*Passive*). *Figure 1* shows that Founda-

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tion A's environmental and social footprints are close to those of the overall stock market, whereas the footprints of *Foundation B* are somewhat worse: compared to the passive global stock market portfolio, *Foundation B* invests less in firms that derive revenues from products and services addressing the environmental and social challenges defined by the SDGs.

In *Figure 2*, the analysis is refined by calculating the portfolio-level footprints for the four social and environmental impact themes defined by MSCI (see *Table 1*). The analysis shows, for example, that 1.9% of the total revenue generated by the stocks contained in *Foundation A's* stock portfolio is coming from firms that sell products and services that contribute positively to combating climate change. Similarly, 4.1% of the total revenues of the firms contained in *Foundation A's* portfolio come from firms providing products and services

Figure 3: SUSTAINABILITY FOOTPRINTS AT THE CATEGORY-LEVEL USING MSCI ESG SUSTAINABLE IMPACT METRICS



addressing basic need issues. Examples of such products and services are, for instance, those that contribute to the daily intake of essential nutrients, drugs and healthcare equipment used to treat the world's major diseases, or products and services used for basic sanitation. Again, Foundation A's portfolio is somewhat aligned with the market, whereas Foundation B's portfolio appears to be slightly worse than the overall stock market in terms of its sustainability footprint across the four themes.

Finally, the sustainability footprints can also be calculated at the finest granularity, that is at the category-level. The results from this analysis are presented in Figure 3. Quite interestingly the analysis shows that the firms contained in the stock portfolio of Foundation B derive about 3.16% of their total revenues from products and services related to the

Major disease treatments category. This number is substantially higher than for passive stock portfolio. In other words, relative to the stock market as a whole, Foundation B seems to over-weight firms that derive revenues from products that fall in the treatment of major diseases category. Firms from this category are often pharmaceutical or life science oriented firms, which have a close link to the biomedical and science related mission of Foundation B. Thus, the sustainability footprint at the theme-level reveals that Foundation B does to some extent align its investment strategy with its mission by overweighting investments in firms that provide solutions to major diseases. In other words, Foundation B seems to be somewhat following a mission-related investment strategy when it comes to its direct stock holdings. ■

Footnotes: 1) Emerson, J. (2003). Where money meets mission. *Stanford Social Innovation Review*, 1(2), 38–47. 2) Global Sustainable Investment Alliance (GSIA) (2015), *Global Sustainable Investment Review 2014*. Available here: <https://bit.ly/18l6WAv>. 3) Goldseker, S., and Moody, M. (2017). *Generation impact: How next gen donors are revolutionizing giving*. John Wiley & Sons. 4) Morgan Stanley, *Campden Wealth (2014), Next Generation Wealth, Defining a New Direction, The Morgan Stanley Private Wealth Management/Campden Wealth Next Generation Wealth Report 2014*. 5) Emerson, J. (2003). Where money meets mission. *Stanford Social Innovation Review*, 1(2), 38–47. 6) Fritz, T. M., and von Schnurbein, G. (2015). *Nonprofit Organizations as Ideal Type of Socially Responsible and Impact Investors*. *ACRN Oxford Journal of Finance and Risk Perspectives*, 4(4), 129–145. 7) CFA Institute (2015). *Environmental, Social, and Governance Issues in*

Investing: A Guide for Investment Professionals. Available here: <https://cfa.is/2SBFNAT>. 8) Krauss, A., Krueger Philipp, and Meyer, J. (2016). *Sustainable Finance in Switzerland: Where Do We Stand?* Swiss Finance Institute—White Paper. Available here: <https://bit.ly/2V33sWg>. 9) Gibson Brandon, Rajna, and Krueger, Philipp (2018). *The sustainability footprint of institutional investors*, Swiss Finance Institute Working Paper N° 17-05, European Corporate Governance Institute (ECGI) – Finance Working Paper No. 571/2018. Available here: <https://bit.ly/2yoASse>. 10) World Commission on Environment and Development (WCED), 1987. *Report of the World Commission on Environment and Development: Our Common Future*. Available here: <https://bit.ly/1bZJgwk>. 11) See <https://bit.ly/2A8dDGd>. 12) MSCI (2018). *MSCI ESG Sustainable Impact Metrics Methodology and Definitions*. 13) Menou, V. and Nishikawa L. (2016). *Toward Sus-*

tainable Impact Through Public Markets: A Framework to Align Investments with the UN Sustainable Development Goals. Available here: <https://bit.ly/2SBKb2P>. 14) United Nations (UN) (2017). *The Sustainable Development Goals Report: 2017*. Available here: <https://bit.ly/2SBKpab>. 15) See <https://bit.ly/1Kjkn0B> for more information on the SDGs. 16) Note that if the portfolio compositions of third-party managed stock investments of foundations are available, the sustainability footprints could also be calculated for such third-party managed mandates. 17) For instance, the Securities Exchange Commission (SEC) requires institutions who exercise investment discretion over USD 100 million or more in equity securities to publicly disclose their portfolio holdings on a regular basis. See <http://bit.ly/2oNwq1B>.