Scientific Portfolio
An EDHEC Venture

A Scientific Portfolio Publication

Institutional Equity Portfolios: How Can Asset Owners Build Coherent Sustainable Strategies?

March 2024

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Abstract

The number of equity funds claiming to be sustainable continues to grow, as well as the regulatory transparency requirements they face. Despite this trend, sustainable finance is facing a double "identity crisis": on the one hand, civil society is increasingly denouncing financial greenwashing and questioning the real impact of sustainable finance, and on the other hand, practitioners are divided on the (double) materiality definition and the most effective levers needed to make an extra-financial impact. This article aims to assist institutional asset owners faced with these questions as they try to build a sustainable portfolio, whether indexed or active. Based on a review of the academic literature, we highlight that the main building blocks that investors ought to consider – themes, levers (exclusions, allocation, engagement) and data - are interdependent. We then propose a classification of sustainable investments, as well as different levels of ambition in terms of extra-financial impact, that lead to four families of coherent sustainable investment strategies that combine themes, levers and data in a consistent way.

Key Takeaways

• While the lack of standardisation in sustainable investing is often perceived as a challenge for investors, in reality, practitioners and academic research have identified sound building blocks that should underpin any sustainable investment strategy.
• Each building block (ESG themes, implementation levers, data) offers multiple choices and no silver bullet: it is the consistent combination of these building blocks that creates a coherent investment strategy.
• Investors can effectively monitor the impact of their investment actions by focusing on the aspects that they can control, namely observable and measurable outputs, rather than outcomes that depend on too many stakeholders to be subject to accountability.

Keywords: sustainable portfolios, extra-financial impact, exclusion, engagement, allocation.

JEL codes: G11, G12, G23, Q54.

I. Introduction

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The multiple definitions of "sustainable" finance make some reported figures difficult to interpret but the growth in that space since the early 2010s is very clear (Exhibit Figure 1). Global "sustainable investment" reportedly[1] reached USD30.3 trillion in 2022, representing about 38% of all professionally managed assets. At the same time, the number of financial institutions adhering to the Principles for Responsible Investment has risen from less than 250 in 2006 (when the initiative was created) to 3,404 in 2021. This growth has triggered numerous regulatory developments: at the end of 2022, 388 sustainable finance-related measures were in force globally, with at least 50 introduced in 2022[2].

Despite this steep acceleration in the last decade, sustainable finance is currently facing a double "identity crisis"[3]: on the one hand, a crisis of credibility in the eyes of civil society, and on the other hand, an internal crisis caused by divergent definitions and principles.

Even with the development of regulations aimed at classifying economic activities and financial instruments as sustainable (e.g., the European Union taxonomy for sustainable activities), no consensus prevails on the definition of a sustainable investment. Civil society is therefore increasingly voicing concerns over the risk of "financial greenwashing". For example, the Great Green Investment Investigation conducted by two investigative platforms in collaboration with a dozen European media revealed that nearly half of the 838 European sustainable ("Article 9") funds were invested in companies "*that contribute to global warming*"[4]. The regulator also opened investigations into financial institutions suspected of greenwashing practices: in 2023, DWS Investment Management Americas agreed to pay a penalty of USD19 million because of "*misstatements regarding its Environmental, Social and Governance (ESG) investment process*[5]". We will develop the definition of sustainable investment in the following sections of this paper. At this point, we retain the broad definition proposed by the Global Sustainable Investment Alliance that "*sustainable investment is an investment approach that considers environmental, social and governance (ESG) factors in portfolio selection and management*" (GSIA, 2021). We will also use the term "sustainable investor" to refer to an asset owner who seeks to build and manage portfolios in line with this approach.

Civil society is also increasingly concerned about whether sustainable investing has an effect on the "real" economy. For instance, despite the enthusiasm shown by financial institutions for climate change mitigation since the 2015 Paris Agreement, the trend in global greenhouse gas (GHG) emissions is far from being compatible with the targets set in the agreement (IPCC, 2022). The financial sector cannot be held solely responsible for this development, but IPCC (2022) points out its inconsistent "climate investment gap", i.e., a lack of financing on climate mitigation and adaptation solutions on one side, and "*persistently high levels of both public and private fossil fuel-related financing*" on the other. A similar observation can be made for the United Nations (UN) Sustainable Development Goals (SDGs) established in 2015. Despite their high popularity among financial institutions to measure extra-financial impact (GIIN, 2020), in 2023 the UN reported that "*progress on more than 50 per cent of targets of the SDGs is weak and insufficient; on 30 per cent, it has stalled or gone into reverse*[6]". Reportedly, a USD5 trillion increase in sustainable AUM (GSIA, 2021) has coincided with a USD1.4 trillion widening of the SDG financing gap in developing countries during the same period[7].

1 - Global Sustainable Investment Alliance (GSIA).
2 - According to the United Nations Conference on Trade and Development World Investment Report 2023, link: https://unctad.org/system/files/official-document/wir2023_en.pdf.
3 - The « identity crisis » of sustainable finance expression is from Chiu, Lin and RouchChiu et al. (2022).
4 - See https://www.ftm.eu/green-investments for more details.
5 - https://www.sec.gov/news/press-release/2023-194
6 - The Sustainable Development Goals Report 2023 – Special edition. Available at: https://unstats.un.org/sdgs/report/2023/The-Sustainable-Development-Goals-Report-2023.pdf
7 - Global Outlook on Financing for Sustainable Development, OECD, 2022. Available at: https://www.oecd-ilibrary.org/finance-and-investment/global-outlook-on-financing-for-sustainable-development-2023_fcbe6ce9-en

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At first glance, and from a macroeconomic point of view, it is therefore legitimate to doubt the effects of finance on sustainable development.

The second component of the identity crisis faced by sustainable finance relates to the divergence between "experts" on two major issues: the link between financial and non-financial materiality and the choice of the most effective strategy for having an impact on the real economy.

Should extra-financial information only be considered for its financial materiality, i.e., its potential effect on the economic and financial performance of corporations or investment portfolios, or, conversely, should the effects of corporations or investment portfolios on the environment or society also be considered? The latter approach is dubbed "double materiality" and is subject to an intense debate in the industry[8], with some critics arguing that double materiality "may obscure the need for political ambition".

This debate somewhat echoes a recurring "doing well by doing good" research question well known in academia. Despite more than 30 years and thousands of studies (see for example Friede, Busch & Bassen, 2015, for a meta-analysis), no consensus has been found on the links between financial and non-financial performance, except to say that non-financial performance does not necessarily run counter to financial performance. In an update based on the review of over one thousand articles, Atz et al. (2023) challenge some industry claims around the presence of an "ESG alpha" and find that the performance of sustainable investing is on average indistinguishable from that of traditional investing.

For the supporters of the double materiality approach, the crisis is not over, however, as there is no clear consensus on the most effective strategies for managing and influencing the impact of their portfolios' constituents on the environment and society. Is engagement more effective than exclusion? Is it more efficient to optimise a portfolio's carbon intensity or its average ESG score? While the links between financial and extra-financial performance have been the subject of numerous academic studies, the extra-financial impact of sustainable finance remains overlooked (Kölbel et al., 2020; Sjöström, 2020).

The objective of this article is to assist institutional investors faced with these questions as they try to build and manage a sustainable portfolio, either indexed or active. First, we review the main building blocks that investors ought to consider - i.e., themes, levers and data - by presenting the practitioners' trends as well as contributions from academic research. In particular, we show that the choices within these blocks are not necessarily exclusive, but most importantly that these blocks are interdependent. We then propose a classification of sustainable investments, as well as different levels of ambition in terms of extra-financial impact. We show that different pragmatic answers to these questions are possible, and that these answers make it possible to construct four families of coherent sustainable investment strategies by combining themes, levers and data in a consistent way.

8 - https://www.ipe.com/comment/viewpoint-a-response-to-issbs-fabers-triple-illusion-criticism-of-double-materiality/10069470.article

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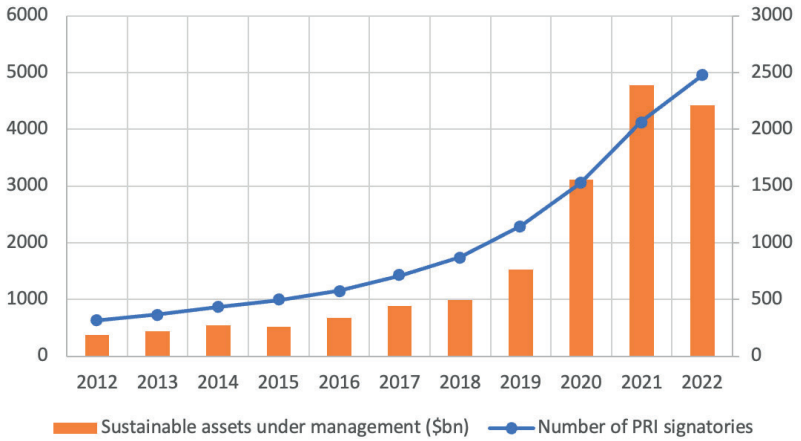
Figure 1. Trends in global sustainable investment



Source: Assets under management of sustainable funds according to UNCTAD (left axis), based on Morningstar. Number of PRI (Principles for Responsible Investment) signatories (right axis) based on the PRI.

2. Reviewing Choices to Build a Sustainable Equity Portfolio

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Building a sustainable portfolio, whether from scratch or by customising an existing one, requires choices to be made in terms of themes to be addressed, levers to be activated and data to be used. In this section, we summarise practitioners' trends and the contribution of academic research regarding these choices.

2.1 Themes: from Local "ESG" to Global "SDG"

Sustainable investing has origins in Jewish, Christian, and Islamic traditions and the Pioneer Fund – founded in 1928 and excluding "sin stocks" such as companies involved in the tobacco, alcohol, gambling or weapons industries – is generally considered to be the first sustainable[9] fund (Renneboog et al., 2008). In the context of the 1960s, marked by the Vietnam War, the civil rights movement and a vast campaign against poverty, sustainable investment took on a more political role (e.g. the Pax World Fund founded in 1971 was created for investors opposed to the Vietnam War) but the concept of incorporating extra-financial considerations in investment decisions remained very criticised, as highlighted by the famous 1970 Milton Friedman statement that "the social responsibility of business is to increase profits" (Schueth, 2003; Townsend, 2020). The evolution of sustainable investment in the 1970s and 1980s coincided with the development of environmental and consumer protection movements and legislation, following disasters such as the Chernobyl nuclear power plant explosion (1986) and the Exxon Valdez oil spill (1989) (Renneboog et al. 2008).

The development of sustainable investment is closely linked to the development of corporate responsibility, and it is worth looking at some US corporate social responsibility case studies between 1972 and 1974 from Ackerman and Bauer (1976) to highlight similarities and differences with today's issues. The authors categorise the social issues faced by financial and non-financial companies into three categories: external problems not directly caused by the organisation's activities, external problems caused by the company's activities, and internal problems caused by the company's activities. The authors observe a shift from the first category to the second and third, i.e., from large social issues, such as poverty, towards social issues centred on company activities, such as consideration for minorities, women, employee health and safety. We also observe that environmental issues remained rare and were limited to local pollution and that these "social demands" were explicitly expressed by local stakeholders.

According to Townsend (2020), one of the main catalysts for sustainable investing since the mid-2000s is climate change (at least in Europe), which represents a shift from local environmental issues to a global problem that requires global solutions. Based on a literature review, Latapí et al. (2019) also show an expansion in corporate social responsibility to include social and environmental issues not directly caused by the organisation's activities but across the global supply chain (e.g., Scope 3 on GHG emissions). This change in the nature of societal demands has given rise to the concept of "grand challenges" (Ferraro, Etzion and Gehman, 2015):

> "*Grand challenges are] complex, entailing many interactions and associations, emergent understandings, and nonlinear dynamics, [...] confront organisations with radical uncertainty,*

9 - Renneboog et al. (2008) use the words "ethical" and "socially responsible" instead of sustainable.

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> *by which we mean that actors cannot define the possible future states of the world, [...], and are evaluative, cutting across jurisdictional boundaries, implicating multiple criteria of worth, and revealing new concerns even as they are being tackled."* (p. 365).

In contrast with the specific demands of the 1970s, grand challenges require substantial coordination between companies but also, most importantly, with political institutions and civil society. The United Nations sustainable development goals (SDG) established in 2015 are the result of such a coordination: the 17 goals cover most of the traditional Environmental, Social and Governance (ESG) issues. They were however not primarily designed for sustainable finance and must therefore be "translated" for financial institutions[10].

For sustainable investors, i.e. those that incorporate extra-financial considerations into their investment decisions, this historical analysis shows that addressing current grand challenges will require collaboration with other institutions (e.g., Global Investor Coalition on Climate Change, Institutional Investors Group on Climate Change, Climate Action 100+) and the adoption of a common language with stakeholders such as the United Nations' SDG framework.

2.2 Levers to Influence Companies

Achieving sustainable development goals requires companies to change their behaviour. For sustainable investors, the challenge is to determine the most effective levers for triggering these changes. There is no consensus on the classification of these levers, also sometimes referred to as strategies. For the sake of simplicity, we distinguish levers according to their effects on the portfolio: exclusion, which results in a list of stocks that will not be in the portfolio (thereby influencing the selection process), allocation, which translates into a weighting scheme applied to the stocks selected, and engagement, which refers to the relationship with the companies and other stakeholders. A careful weaving of selection and allocation decisions may be required to address the fiduciary duty of some sustainable investors (see Section 3.3 for more details).

Defining an investment universe: exclusion

Exclusion is the oldest practice related to sustainable finance and remains very popular, with about USD3,840 billion of AUM subject to negative screening and USD1,807 billion subject to norm-based screening (out of a total of USD30,321 billion of sustainable AUM; see GSIA, 2023). However, the interest in this lever seems to be diminishing: while the sustainable AUM increased by 32% between 2016 and 2022, negative screening decreased by 75% in the same period and norm-based screening by 71%.

According to the Financial Exclusion Tracker Initiative, current exclusions are mostly related to climate change – fossil fuels divestment has become increasingly popular, and it is now estimated that nearly 1,600 institutions have publicly committed to divesting from companies whose activities relate to fossil fuels[11], weapons, tobacco, or raise human rights issues[12]. Furthermore, this is the lever for which regulations are the most prescriptive. The EU regulation on climate benchmarks requires for example exclusion criteria related to fossil fuel activities.

10 - There are currently two main uses of this framework by financial institutions: as a reporting grid and as a taxonomy of sustainable investments.
11 - As of October 2023, source: https://divestmentdatabase.org/.
12 - As of October 2023, source: https://financialexclusionstracker.org/.

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While the above list may be seen as a form of consensus to identify non-sustainable activities, the metrics used to assess the involvement of companies and the exclusion thresholds differ widely across institutions. The French financial market regulator pointed out for example that the "*criteria adopted for the [coal] exclusion policies remain very heterogeneous*" among asset managers[13]. The report also points out that several asset managers have developed exception rules and can therefore keep companies exceeding these thresholds in their portfolio if the company has for example a transition plan. An exclusion policy is therefore not simple to implement or to assess. It requires choices on metrics and thresholds and therefore depends heavily on the coverage and quality of the data.

From an academic perspective, exclusion is the lever that has been studied the most. The main theoretical mechanism to explain the effect of exclusion on the extra-financial performance of a company is the following: when sustainable equity investors divest from a company, this reduces the offer of capital for this company and causes a rise in its market-implied cost of equity capital, observed in a fall in share price. The targeted company will then have an incentive to reform its activity if the reform cost is lower than the share price loss. Heinkel, Kraus and Zechner (2001) were the first to develop such a model: they show that divestment can cause a firm to invest in reforms only if an important percentage of the polluting firm's investor base divests (the figure of 20% is given). These theoretical results have been confirmed and extended by more recent studies focusing on climate mitigation, including Pástor, Stambaugh and Taylor (2021) and De Angelis, Serafeim and Sikochi (2022).

This theoretical mechanism is nevertheless limited. Whether the increased cost of capital of a company results from a fraction of investors excluding it, or from all investors deciding to partially reduce their allocation to the company, the effect is the same if the dollar amounts in both cases are the same. However, in practice, divestment is often associated with a public announcement, which can amplify its effect on both financial and non-financial performance by generating a reputational risk for the company. Dordi and Weber (2019) show for example that divestment announcements lead to significant negative impacts on the share price of fossil fuel companies.

From an empirical perspective, most of the existing literature looks at the impact of exclusions on asset prices and portfolio financial performance subsequent to exclusion, with contrasting results (e.g., Trink et al., 2018, Hunt and Weber, 2019, Khajenouri and Schmidt, 2021). This lack of consensus – due to differences in sample characteristics (region, period, size) and exclusion criteria – shows that a specific analysis for each portfolio must be carried out to ensure that the implementation of an exclusion policy, or its evolution, is compatible with risk constraints.

The impact of exclusion on the extra-financial performance of companies has been under-investigated. The overall effect of exclusion (or reallocation) on the cost of capital and the extra-financial behaviour of the firm is frequently challenged by the fact that because divestment occurs in the secondary market, stocks can simply change hands as long as they find buyers, generating no (further) incentive to evolve, and that companies might be able to finance their growth without being dependent on equity capital markets. Cojoianu et al. (2021) shows for example that a large majority of new financing

13 - Most of them are looking at thermal coal as a proportion of revenues but with thresholds varying from 10% to 50%, while others also consider metrics such as thermal coal production, proportion of electricity based on coal, company developing power plant projects. Source: "Monitoring and assessing the climate commitments made by French financial institutions", available at: https://www.amf-france.org/sites/institutionnel/files/private/2022-12/Rapport%202022%20AMF-ACPR_Anglais_VF.pdf

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for fossil fuels comes from bank lending (64%) and bond issuance (26%). Additionally, Berk and van Binsbergen (2021) propose an equilibrium model for the effect of sustainable investors on the cost of capital of firms that are targeted for their social or environmental costs; they predict no material impact on cost of capital unless sustainable investors represent more than 80% of all investable wealth, and therefore recommend engagement as a more effective strategy[14]. Hartzmark and Shue (2023) argue that such a strategy can even become counterproductive, as companies penalised by a higher cost of capital might become more short-termist and – in the case of climate change – emit more greenhouse gases in order to generate cash in the short term, while rewarding companies that are already "green" does little to improve their environmental impact.

However, it would be restrictive to consider only the direct impact (through the cost of capital) of exclusions. Bergman (2018) highlights for example the indirect impact in terms of public discourse shift over the low-carbon transition and Braungardt, van den Bergh and Dunlop (2019) show that the divestment movement has had positive effects on the development of effective climate policies. This is confirmed by Cojoianu et al. (2021), who find that increasing oil & gas divestment pledges in a given country is negatively related with new capital flows to domestic oil & gas companies, which suggests that exclusion has a real effect on the financing of the sector[15]. To our knowledge, however, there are no similar studies on other sustainable development issues, particularly social ones.

All in all, when is the exclusion lever relevant? The first situation is for consensus non-sustainable activities or behaviour such as human rights violations. In this case, the more the issue is shared with other investors, the greater the impact of exclusion on the cost of capital (although such impact might remain limited unless a majority of investors join forces, as indicated by Berk and van Binsbergen, 2021) and the stronger the political signal sent to all stakeholders. The second situation concerns companies where other levers, in particular shareholder engagement, have failed. In this case, the exclusion may be seen as a conclusion of the unsuccessful engagement effort. It may even be designed as a credible deterrent if publicly announced ex-ante to the targeted company and other relevant stakeholders. (Dawkins, 2018). The third situation is the one that historically led to exclusions: when it is a moral imperative for investors, whether it is related to "sin" activities or to non-sustainable activities such as fossil fuels (Quigley, Bugden and Odgers, 2020). In this case, the aim is not to have an impact on the companies but to align the holdings of a portfolio with the values of the end investors. We suggest a fourth situation due to investors' limited resources: while shareholder engagement may be favoured initially, it cannot be only supported by shareholder voting and requires significant resources to be effective. In this case, exclusion is the consequence of investors prioritising their engagement efforts on certain issues or companies, recognising that engagement resources are scarce and need to be optimally allocated.

Building a portfolio: allocation

Allocation rules related to sustainable issues – i.e. reweighting securities without excluding any firms from the portfolio – can support two types of objectives. The first is to maximise sustainable metrics, such as average ESG scores, carbon intensity, or average sustainable revenues. However, from a theoretical

14 - It is worth noting that this threshold is obtained for a very broad universe of excluded stocks and may be significantly reduced when considering more targeted exclusions.
15 - However, they also highlight that banks situated in countries with high divestment commitments and stringent environmental policies provide more finance to oil & gas companies abroad.

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perspective, the only arguments supporting an effect of this type of allocation are related to the cost of capital channel described above and seem therefore limited.

The second type of objective is to guarantee a minimum exposure to certain market segments, either determined by neutral criteria – the EU Climate Transition and Paris-aligned benchmarks must for example demonstrate that the aggregated exposure to climate sectors is at least equivalent to the exposure of the universe to ensure that the benchmark is exposed to climate-related stocks – or using sustainable criteria, sometimes referred to as "positive screening". Funds targeting climate solutions might for example set a minimum allocation to companies providing climate solutions[16].

A third alternative is to consider allocation as an intermediate level between engagement and exclusion. As managers may take short-term stock price reactions into consideration for their decisions, Edman, Levit and Schneemeier (2022) consider the introduction of incentives for managers and suggest that a more efficient strategy than divestment might be tilting (sometimes called a best-in-class strategy), i.e., all else being equal, holding a larger share of those "non-sustainable" firms whose managers have taken a corrective action to reduce externalities. The underlying rationale is that managers will not have an incentive to reform if they know that the investor will remain disinvested because of the inherent nature of the activity. On the other hand, since the manager has an interest in a high share price on the secondary market, they will have an incentive to undertake reforms if they know that the investor will, all else being equal, reinforce their position and therefore support the share price.

So, when is the allocation lever relevant? Holdings-based allocation can have an effect through the cost of capital – which seems limited according to the literature - but cannot take advantage of the potential indirect effects linked to the binary and generally public nature of exclusion. In specific situations, tilting and the creation of incentives can however be an interesting intermediate lever before exclusion if combined with engagement. Allocation is nonetheless an essential lever for ensuring that a portfolio is at least *exposed* to the issues it claims to support (positive screening). To this end, allocation by "segments" meeting sustainability criteria is preferable to a "holdings-based" maximisation approach: it limits the variability of the metrics (as the share of the segment does not depend on individual weights). As a result, the stock-level optimisation-based allocation can be entirely dedicated to the management of traditional financial risks (by setting individual weights), while subject to sustainability-related constraints (see section 3.3).

Being an active shareholder: engagement

According to GSIA (2023), 27% of sustainable AUM were subject to "*corporate engagement and shareholder action*" in 2022. Shareholder engagement is commonly seen as the alternative to exclusion and a more efficient lever to have "*real-world impact*" (PRI, 2021). Paradoxically, this lever remains difficult to characterise as investors usually only report on the number of dialogues with companies and statistics for votes on resolutions presented at general meetings. Just like exclusion, climate change has become a central issue of shareholder engagement and voting[17], and two trends are emerging. The first is the development of specific ESG votes. Inspired by the "Say on Pay", "Say on Climate" are for

16 - See for example Fidelity Funds' Sustainable Climate Solutions Fund.
17 - https://corpgov.law.harvard.edu/2022/11/05/shareholder-voting-trends-2018-2022/

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example management-backed resolutions regarding their climate strategy. Born in the US, the practice is gradually also gaining favour in Europe[18]. While the votes remain largely nonbinding, they facilitate the dialogue with investors. The second trend is the development of collective investor initiatives on shareholder engagement. Climate Action 100+ is for example an initiative joined by 700 investors to engage 170 companies that are key to climate mitigation.

Marti et al. (2023) also highlight that engagement is not restricted to a dialogue with companies, but that investors are also increasingly engaging with their peers and with regulators, an approach that they qualify as "field building". This practice acknowledges that the behaviour of a company is not only influenced by its shareholders but by its whole environment. The authors highlight five ways an investor can influence this "field": shifting other investors' evaluation of issues, sharing expertise, delegitimising certain business activities, establishing voluntary standards, and supporting regulatory changes.

From an empirical perspective, the question of the effectiveness of engagement in changing corporate behaviour remains overlooked (Sjöström, 2020). Reviewing five empirical studies, Kölbel et al. (2020) show that shareholder engagement requests succeed in 18% to 60% of cases and conclude that "*these [five] studies provide strong evidence that shareholder engagement is an effective mechanism through which investors can trigger reforms that improve the quality of company activities*". Barko, Cremers and Renneboog (2022) find for example significant improvements in the average ESG ratings[19] of firms while Flammer, Toffel and Viswanathan (2021) find improvement in voluntary disclosure of climate change risks (which does not necessarily imply a reduction in greenhouse gas emissions) after shareholder activism.

Finally, engagement is relevant when investors are looking to drive change in behaviour, especially if their focus is on transitioning non-sustainable activities into sustainable ones. However, efficient engagement requires time and human resources and should therefore target a limited number of themes and companies. The effect of engagement will be strengthened if combined with a clear exclusion threat (Hirschman, 1972; Levit, 2019), shared with other investors (Slager et al., 2023), and extended beyond relations with companies (field building).

2.3 Primary and Secondary ESG data to Build and Monitor a Portfolio

According to a BNP Paribas survey of 420 institutional investors, 71% named "*incomplete and inconsistent data*" as the most significant barrier to greater adoption of sustainable investment across their portfolios[20] . However, these apparent obstacles need to be tempered according to the type of data in question, particularly if it concerns *primary* data, i.e., data which directly describes the state and activities of a company in the same way as financial accounting data, or *secondary* data, i.e., metrics derived from primary data (Table 1).

18 - https://www.polytechnique-insights.com/en/columns/economy/say-on-climate-the-influential-role-of-shareholders-in-company-policies/
19 - However, as discussed in section 2.3, ESG ratings may not always reflect the sustainable behaviour of a company but rather its exposure to ESG-related risks.
20 - Incomplete and inconsistent data was followed by greenwashing (61%) and the difficulty of reconciling ESG investing with fiduciary duties (53%) according to the Global ESG Survey 2023, BNP Paribas, available at: https://securities.cib.bnpparibas/global-esg-survey-2023/global-esg-survey-2023-report/.

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Table 1. Examples of ESG data according to their characteristics.

		Standardised data		Non-standardised data	
		Modelled	Measured*	Modelled	Measured*
Primary data	Monetary metrics related to revenues, consumption and Investments,		Revenues from sustainable activities	Revenues related to sustainable development goals	
	Physical metrics related to consumption and production	Carbon emissions Scope 1	Water consumption	Biodiversity footprint	Number of electrical cars produces
	Qualitative data related to sustainable strategy, controversies		Climate strategy		Biodiversity commitments
Secondary data	Aggregated metrics			Scores, alignment temperature	
	Extended responsibility metrics	Carbon emissions Scope 2 and 3		Avoided Emissions	
	Prospective metrics	Science-based targets		Alignment temperature	

**Can also be modelled by data providers when the data has not been measured by a company.*

Primary data

In terms of primary data, the first observation concerns the increasing standardisation of metrics, whether in terms of reporting requirements for non-financial companies (e.g., GHG protocol for carbon emissions, EU taxonomy for green revenues and investments) or financial companies (e.g., Partnership for Carbon Accounting Financials). However, not all metrics have the same level of maturity, and we observe a strong bias towards metrics linked to climate mitigation. Among the 17 mandatory Principal Adverse Indicators defined by the EU SFDR, 12 are for example related to the environment with nine of them focusing on GHG emissions.

At the same time, the involvement of new institutions (e.g., NGOs, government organisations, institutional investors) is giving access to increasingly public data. The German non-profit organisation Urgewald provides for example a Global Coal Exit List that is used by some institutional investors as an exclusion criterion. More recently, the Finance Exclusion Tracker Initiative has published a public aggregated exclusion list gathered from more than 80 institutional investors.

Finally, the recent technological advances in web scraping, text and picture analysis have enabled the emergence of "alternative" ESG primary data, in particular for monitoring controversies of physical assets in real time.

These recent advances in standardisation, availability, and technology have led to more reliable ESG primary data, which should therefore be preferred for levers requiring binary decisions, i.e., for defining exclusion criteria or sustainable investment segments.

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Secondary data

ESG ratings (or scores) are the most widely used ESG data, but also the most controversial. First, they are well-known to diverge in the sense that different providers give different scores to the same company. As an example, within the S&P500 companies, the average correlation between ESG ratings of six providers amounts to less than 0.5 (Gibson et al., 2022). These divergences also exist at the fund level: the three data providers Bloomberg, Morningstar and Refinitiv agree in less than 20% of cases that a fund is ESG[21] (317 funds out of more than 1,800 funds which are defined as ESG by at least one data provider).

Is this lack of convergence a problem? If these divergences were explained by different ambitions, e.g., some methodologies focusing on financial materiality while others focusing on impact, it would not be. However, Berg, Koelbel and Rigobon (2022) show that the main source of divergence is not the scope of ESG attributes (e.g. one score provider may include lobbying activities, while another might not) or the weight assigned to each attribute, but rather the measurement of each ESG attribute (the respective contributions of "measurement", "scope" and "weight" are 56%, 38% and 6%). This concern is exacerbated by the "halo effect" observed in the same study: a firm receiving a high score in one attribute is more likely to receive high scores in all the other attributes from that same rater. Additionally, in an empirical study, Raghunandan & Rajgopal (2022) confirm that ESG scores are correlated with the quantity of voluntary ESG-related disclosures but not with firms' compliance records or actual levels of carbon emissions, and that sustainable mutual funds, despite holding stocks with higher average ESG scores, have historically displayed worse track records for compliance with labour and environmental laws, relative to non-sustainable funds. Christensen, Serafeim and Sikochi (2022) also show that the quantity of voluntary ESG-related disclosures leads to greater ESG rating divergence. Finally, as highlighted by Larcker et al. (2022), not all ESG scores are designed to reflect the sustainability performance of corporations but instead attempt to estimate the financially material risks related to ESG criteria.

In parallel with the development of ESG scores, the fight against climate change has given rise to new secondary metrics that extend the scope of analysis (e.g., GHG emissions Scope 2 and 3) and/or include a forward-looking dimension (e.g., temperature scores). While the objective of these metrics seems clear, the results vary widely from one methodology to another (e.g., Raynaud, Tankov and Voisin, 2020, for temperature scores) and are therefore difficult to compare.

Finally, secondary metrics involve modelling, and as such present a risk of a black box effect if the model choices are not fully understood by their users. However, they are useful in a number of ways. If an aggregation methodology is well understood and accepted, it can facilitate communication thanks to a limited number of indicators. In addition, the extended responsibility indicators and the forward-looking indicators make it possible to anticipate indirect or distant issues that need to be looked at in greater depth (e.g., climate alignment), and can be used to enhance dialogue with companies.

21 - European Central Bank. Financial Stability Review (May 2022). Available at: https://www.ecb.europa.eu/pub/pdf/fsr/ecb.fsr202205~f207f46ea0.en.pdf.

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We have just seen that the choices within the building blocks of a sustainable portfolio -themes, levers and data – are not necessarily exclusive (e.g., engagement and exclusion), but most importantly that these blocks are interdependent (e.g., data quality and themes). Then how should they be combined? In this section, we discuss possible definitions of sustainable investment and the degrees of extra-financial impact that can be expected. We show that different pragmatic answers to these questions are possible, and that these answers lead to four types of consistent combinations of themes, levers and data.

3.1 Defining sustainable investments

In a request for clarification on the definition of a "sustainable investment", the EU Commission responded that it is up to financial institutions to specify this definition, and that the definition should meet three criteria: do no harm to environmental or social objectives, contribute to environmental or social objectives, and respect good governance criteria. While the EU commission introduced the notion of sustainable *investment*, the concept of sustainable development is not a new one. We propose looking back at its history in order to identify the characteristics that could help an institutional investor to define a sustainable investment.

Travelling back in time to an Enlightened period

The seminal 1987 Brundtland report defines sustainable development as a development that "[…] *meets the needs of the present without compromising the ability of future generations to meet their own needs*." However, Berkowitz and Dumez (2014) show that the concept was already known in the 18th century. Carl von Carlowitz, who oversaw the silver mining operations in Saxony (Germany), used the word "sustainability" in 1713 when he recommended stopping the overexploitation of forests, which he saw at the time as a risk on the wood supply chain. A few decades later, in the spring of 1789, Thomas Jefferson suggested to his friend the Marquis de Lafayette that he add an article specifically dedicated to the "rights of future generations" in what was to become the French Declaration of the Rights of Man and of the Citizen. Although there is evidence that Lafayette did submit the article, it was not included in the final draft... Jefferson, who was the US ambassador in Paris at the time, clarified his views on the matter in a letter sent to James Madison:

> "The question whether one generation of men has a right to bind another, seems never to have been started either on this or our side of the water. Yet it is a question of such consequences as not only to merit decision, but place also, among the fundamental principles of every government. […] I set out on this ground, which I suppose to be self-evident, "that the earth belongs in usufruct to the living": that the dead have neither powers nor rights over it […] Then no man can, by natural right, oblige the lands he occupied, or the persons who succeed him in that occupation, to the payment of debts contracted by him." (6 September 1789)

While Carlowitz's motivations were primarily economic and Jefferson's were undoubtedly political and philosophical, both shared the idea that sustainability was first and foremost about protecting

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the world, not necessarily improving it. Translated into sustainable finance terms, the original definition of sustainable development is closer to a "do no harm" injunction than a call to "positive contribution".

For equity portfolios, the first type of sustainable investment can be derived from this original concept: an investment in a company whose business is conducted in a sustainable way, i.e., that do "no significant harm" to the planet nor people. The nature of the "harm" should however be specified in practice, covering both activities and behaviour. This can be done for example using the EU taxonomy DNSH criteria available for six environmental pillars, or through the lens of the SDG framework[22]. Primary data, especially revenue split, physical metrics related to consumption and production, and controversies should be used to screen this type of sustainable investment.

A second type of sustainable investment is related to investments in companies with "positive contributions", i.e., companies that provide solutions to achieve one of several sustainable development goals. In this case, the focus should be on the core activities, not the behaviour. However, because equity investment does not differentiate activities within a company, defining such a sustainable investment requires setting a minimum share of positive contribution and rules regarding the treatment of negative contribution (through activities *and* behaviour). The SDI Asset Owner Platform qualifies for example an entity as a "sustainable development investment" if its positive contributions are greater than 10% in terms of revenue and negative contributions less than 10%. Regarding the treatment of negative contributions, we argue that, to ensure consistency, a company should meet the "do no harm" criteria mentioned above to belong to this second type of sustainable investment category. Primary data such as revenues or production physical metrics should be favoured to screen positive companies, while secondary metrics such as scores should be avoided as they focus on behaviour (how the company produces) more than activities (what is produced) and aggregate positive with negative contributions.

3.2 Setting and monitoring pragmatic ambitions for change

Whatever the definition of sustainable investments, the question of a portfolio and its manager's contribution to change is central to build a consistent sustainable strategy. What level of extra-financial effect can investors target and how can they demonstrate it?

Targeting change, from alignment to impact

We have seen in section 2 that the question of the effects of sustainable practices on corporate behaviour remains overlooked by academic literature, but that existing empirical studies related to engagement demonstrate small but significant changes in corporate behaviour. While the magnitude of change may be difficult to measure, there is enough evidence to validate a theoretical model of change based on the three levers of exclusion, allocation, corporate and stakeholder engagement.

22 - However, current investment taxonomies related to SDG seem to have a "positive contribution" bias.

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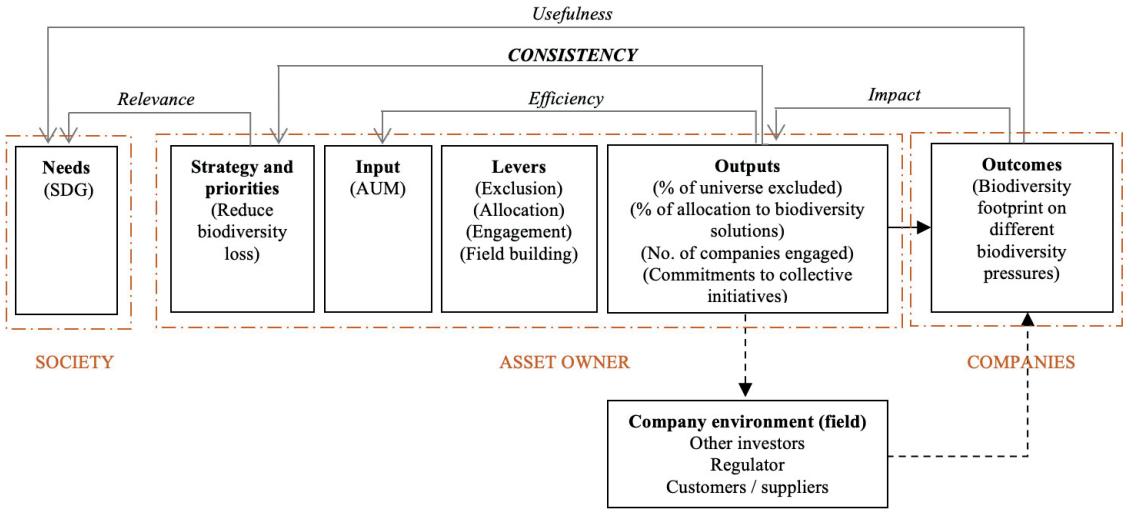
However, we have also shown that the magnitude of the change depends on the resources dedicated to each lever, both from an organisational perspective (human resources for engagement, datasets to screen companies) and a financial perspective (large deviations due to exclusion or allocation choices may have a significant impact on the risk profile of the funds). The degree of change targeted by a strategy should therefore be placed on a continuum between alignment (where no change is specifically expected but the holdings in the portfolios are aligned with values and priorities) and impact (where an improvement in some specific behaviour and/or activities is explicitly expected[23]).

In order to demonstrate this extra-financial impact, the notion of causality is central. It's not enough to observe a change (performance), impact relates to the causal effect of a given action (e.g., an engagement campaign, an allocation deviation) on this change (Kölbel et al. 2020). Given the quantity of factors that can influence final *outcomes* (e.g., GHG emissions of the portfolio companies), we suggest that institutional investors should first and foremost set targets on, manage and report on what they have control over, i.e., "*outputs*", to ensure the consistency of their strategy (Figure 2).

Figure 2. Theoretical model of change of a sustainable portfolio equity strategy (illustration with Biodiversity)



Note: This diagram shows the relationship between societal needs, the various levers an asset owner can use to build and manage a sustainable portfolio, and actions from companies whose stocks are held by the asset owner (Outcomes). Based on this causal chain, we propose to position the various terms linked to the notion of impact (arrows at the top of the diagram): relevance between an asset owner strategy and the societal needs, consistency between the outputs of an asset owner and its strategy, efficiency of the asset under management, impact of the asset owner outputs on the company belonging to the portfolio outcomes, and finally usefulness of these outcomes regarding the societal needs. Given the limitations of ESG data and of the methodologies used to ensure a causal link between asset owners' outputs and outcomes (company actions), we suggest that asset owners focus on what they have control over: the consistency between their outputs and the strategy they have chosen (a classification of coherent strategies is proposed below).

Finally, we would like to stress that the choice of ambition and corresponding targets is more a question of *priority* than *preference*. In the academic literature – specifically in theoretical works – researchers often refer to "heterogenous ESG preferences", and for practitioners, the idea that sustainability is mostly about preferences has developed with ESG customisation offerings.

23 - These two broad categories echo the Busch et al. (2021) distinction between "Impact-aligned investments" and "Impact-generating investments".

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We argue however that subjective preferences should play a limited role where sustainable standards already exist. More precisely, the portfolio targets should always be derived from science-based or global standards. For example, a portfolio focusing on climate mitigation could refer to the Paris Agreement, or to specific financial standards such as the Net-Zero Asset Owner Alliance's Target-Setting Protocol. The resulting targets might vary according to methodologies, but not according to subjective preferences.

3.3 Incorporating Financial Risk Considerations

For those sustainable investors that exercise a fiduciary duty and/or are constrained by financial risk considerations, it is important to retain the ability to monitor the risk consequences, whether intended or unintended, of pursuing a sustainable objective. In some situations, investors may uncover the presence of a trade-off between extra-financial and financial objectives and will be required to seek an investment strategy that is efficient (i.e., optimal) with respect to such a trade-off while accounting for their personal constraints and responsibilities.

While a review and the management of the financial risks generated by sustainable investment strategies is outside the scope of this paper, we propose a top-down approach that allows to transparently combine financial and extra-financial objectives when implementing a coherent sustainable strategy (see section 3.4). The approach consists in separating the pursuit of each objective to facilitate the exploration of trade-offs and implementing the objectives via a careful combination, or weaving, of selection and allocation decisions. For example, the use of negative screening (exclusion) is a selection decision that addresses a "do no harm" sustainability objective and that can be easily and transparently combined with a portfolio allocation decision then entirely dedicated to the management of a risk budget. It is also possible to implement a separation within the allocation process when the latter is used for both objectives (e.g., positive screening), by introducing "segments" or sub-portfolio constraints for the extra-financial objectives while leaving stock-level allocation for the management of financial objectives (see section 2.2).

3.4 A Classification of Coherent Strategies

If we consider the different types of sustainable investment and the different degrees of change possible presented above, we can construct four main families of strategies and their associated levers (Table 2).

In the first, which we describe as "sustainable", the ambition is essentially to ensure alignment of the portfolio's stocks with the original definition of sustainable development, i.e., to hold only stocks corresponding to companies that "do no harm" to environmental and social issues. To achieve this, the exclusion lever, based on primary data, will be favoured.

In the second, which we call "transition", the ambition is to transform companies that have a negative impact on certain environmental or social issues in order to make them sustainable[24].

24 - The EU commission talks about transition finance: "sustainable finance is about financing both what is already environment-friendly today (green finance) and what is transitioning to environment-friendly performance levels over time (transition finance).
Source : https://finance.ec.europa.eu/sustainable-finance/overview-sustainable-finance_en.

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Engagement on a limited number of themes and companies, combined with exclusion (or tilting), should be favoured, relying both on primary data (e.g., to set exclusion thresholds as threat) and secondary data (e.g., to define science-based transition plans).

In the third, which we call "solutions", the ambition is at least to align a substantial part of the portfolio with solutions that address specific environmental or social issues (alignment), and possibly to reinforce these positive contributions within companies (impact). In addition to ensuring that these companies meet the do no harm criteria of the sustainable strategy through exclusions, this strategy relies on allocation to ensure alignment with specific theme solutions, as well as a dialogue with the companies to stimulate the development of these activities.

Table 2. Classification of consistent sustainable strategies

			Portfolio Initial Allocation		Portfolio Management		
Strategy	Themes	Targeted companies	Negative Screening	Weighting Scheme	Shareholders engagement	Field building	"Output" metrics
Sustainable	All	Companies whose behaviour and activities "do no harm" to any of the SDGs	Covering all SDGs, based on revenues, physical metrics, controversies	Optimising risk and return under sustainability constraints: - Negative screening	-	Publication of exclusion list	Alignment with "do no harm" criteria, dynamic review of controversies
Transition	Specific	Companies whose behaviour and activities "do harm" to certain SDGs, but where change is possible	Companies not prioritised for engagement + Companies where engagement has failed	Optimising risk and return under sustainability constraints:- Negative screening - Min./max. share of "targeted transition companies" (sustainability segment)	Systematically engaging on issues related to the specific theme chosen.	Publication of targets, engagement outputs and exclusion list	Engagement results
Solutions	Specific	Companies whose activities contribute positively to specific SDGs	Covering all SDGs, based on revenues, physical metrics, controversies	Optimising risk and return under sustainability constraints: - Negative screening - Min share of "positive contribution companies" (sustainability segment)	Focusing on engagement related to activities (strategy, investments)	-	Share of "positive contribution" investments
Ethical	All	Companies whose behaviour and activities are in line with ethical choices	Based on subjective preferences	Optimising risk and return under sustainability constraints: - Negative screening	-	-	Respect of exclusion criteria

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Finally, while we consider that subjective preferences have no role to play in defining the criteria and targets of the preceding strategies, they can still be integrated into a fourth category of strategies that we describe as “ethical”, and which aim to comply, for example, with religious or personal values.

Conclusion

Conclusion

Despite its growth and increasingly mainstream positioning, sustainable finance is facing both a credibility crisis with civil society and an internal crisis related to its role and levers. In order to shed light on the choices faced by institutional asset owners when constructing a sustainable portfolio, we began by reviewing the practices and benefits (and limitations) of the various choices in terms of the themes to address, the levers to employ (exclusion, allocation and engagement) and the data to use (primary and secondary). We show that the choices within these building blocks are not necessarily mutually exclusive, and most importantly, that these blocks are interdependent.

We then proposed a classification of sustainable investments, as well as a continuum of extra-financial ambition, from alignment to impact. We show that different pragmatic ambitions are possible, and that these ambitions lead to four families of coherent sustainable investment strategies. Far from being exhaustive, the aim of this classification is to guide practitioners in building a sustainable strategy, and in particular to promote consistency between the ambition, themes, levers and data used.

This article deliberately focuses on the extra-financial impact strategies associated with an equity portfolio, but some of the insights could extend to other asset classes like corporate bonds. We conclude by reminding that institutional asset owners with a fiduciary duty should consider the management of financial risks (including ESG-related risks) alongside the management of a strategy's extra-financial impact, in particular when those risks come as unintended consequences of an extra-financial objective; our proposed classification offers the possibility of pursuing such a dual objective via a careful combination of selection and allocation decisions throughout the portfolio construction process.

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• Bouchet, V. Decomposition of Greenhouse Gas Emissions Associated with an Equity Portfolio (May).

• Herzog, B. ,Jones, J., and Safaee, S. The Perceived Advantages of Self-Indexing for Institutional Equity Investors. (September).

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