

Divest: for what impact?



Divesting: for what impact?

E4S White Paper

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1 EXECUTIVE SUMMARY

Sustainable finance is experiencing a period of spectacular growth and the role of finance is being questioned in an unprecedented manner. Among the environmental, social and governance (ESG) strategies used by responsible investors, the simplest, and undoubtedly the most popular, is that of excluding bad ESG performers.

Exclusion represents a substantial portion of sustainably invested assets worldwide, with USD 19,771 bn of assets applying it in 2018. This underlines its importance and justifies the need to study its real impact on the activities of target companies and on investors' portfolios.

Excluding bad performers would have two main objectives: the first is to alter business practices by depriving the firm of funding and reinforcing the stigmatisation of its current practices; the second is to reduce risk and improve portfolio performance.

Exclusion is likely to affect the target's operating conditions and possibly its ESG strategy through three different channels: managerial incentives, the strengthening of stigmatisation and a capital rationing effect.

The effectiveness of exclusion, particularly through managerial incentives and stigmatisation, seems limited, variable, and dependent on various factors. Two conditions must be met in order for the first two channels to have an effect: first, the investors must publicly declare their intention to divest and, second, the amount divested must be sufficiently large or even very large. Both conditions are necessary to create sufficient pressure on

prices, which could incentivise management to improve business practices, as well as to raise stakeholder awareness. An internal exclusion policy is unlikely to have much impact on financial markets and the public debate. Exclusion is more likely to change the company's operations through managerial incentives, depending on the costs of reform, the type of screening applied, and the compensation scheme and time horizon of the management. As for stigmatisation, even though it de-normalises target industries for stakeholders and may diminish their political influence, its effectiveness remains uncertain given the historical responses of the players involved. These responses include stigma dilution or greenwashing.

It is through capital rationing on the primary market that exclusion could undoubtedly have the most significant effect. It can ultimately deprive the company of funding and prompt it to change its practices, depending on its size and operating environment. Companies that are young, small, local or operate in difficult political, economic, or technical environments will be more affected by capital rationing and are therefore more likely to comply with investor demands. In contrast, for large cap and older multinationals, which are internally funded or have a larger pool of potential investors, the financial pressure will be much lower, if not totally ineffective, and the impact of exclusion reduced or eliminated.

Good and bad ESG performers differ intrinsically, and notably in terms of cost of capital, and therefore in terms of financial returns. Investors seem to expect higher returns for stocks with poor environmental

ratings. These differences between good and bad ESG performers need to be integrated into the investor's strategic asset allocation.

ESG portfolios applying negative screening have performed at least as well as traditional portfolios in recent years, disproving the tenet that bad ESG performers are characterised by higher returns. This performance can be explained by portfolio concentration or sectoral, regional, and risk factor exposures, but it is not always the case. The popularity of ESG investing and the unsustainable price movements that it implies are probably the cause instead.

This momentum effect in favour of good ESG performers cannot last indefinitely. When a new equilibrium is reached, i.e. when the momentum effect fades, green companies are likely to have lower returns.

There would therefore be a financial cost to being a responsible investor in the steady state. This cost is partially offset for first movers, in the ESG strategy popularity phase. It is therefore not always possible to "do well while doing good".

Exclusion would fail to achieve its target in terms of impact on the company's activities and on investor performance. This is before even considering the undesirable consequences that the financial constraints imposed by exclusion might also have. Financial constraints could discourage investments in process improvements or in low carbon technologies, create divestment wave risk and thus disrupt financial stability or worsen poverty in some regions without having a real impact on the environment.

This discussion on exclusion reveals the following key points:

- 1 **Finance is not all powerful.** Having an impact on the real economy, including through divestment, requires good judgement.
- 2 **It is essential to distinguish between primary and secondary markets.** Exclusion should therefore be particularly focused on primary and bond markets.
- 3 **A more thorough and dynamic ESG analysis is required** as a prerequisite for a possible exclusion decision that seeks to balance environmental and social impact and reward good attitudes and improvement strategies.
- 4 **The prospects for achieving an impact are much better with shareholder engagement strategies.** Instead of judging a portfolio's sustainability by its current ESG score or carbon footprint, it would be wiser to consider its potential to change the economy of tomorrow.

2 INTRODUCTION

Sustainable finance is experiencing a period of spectacular growth and the role of finance is being questioned in an unprecedented manner. But are we not expecting too much? How and to what extent can investors make a difference? Ultimately, it is the real economy – producers and consumers – who bear the responsibility and the burden of change. Financiers can ease their conscience and bow to external pressures and regulations, but for finance to make its contribution to the transition to an economy that respects planetary limits, it is important that the pressures it exerts are well directed. The purpose of this paper is to assess **exclusion**, one of the most common strategies adopted by investors, and to present the state of knowledge about its impact.

The first step in assessing any responsible investment strategy is to discriminate between companies whose current activities and future objectives are consistent with a sustainable future and those for which it is clearly not the case – while acknowledging that there is a grey area. This is a broad topic that is of the

utmost importance. However, it will not be the focus of this analysis. Let us just emphasise the need to avoid a static approach, e.g. focused on who the big polluters are today, and to adopt a more dynamic approach differentiating between companies with an ESG vision and strategy and those that do not have one, e.g. whose temperature paths are not compatible with a zero-carbon economy within a credible timespan.

This analysis explores the following two questions instead: how can responsible investors using an exclusion strategy impact companies with bad practices? And what are the consequences of this strategy on their portfolio? This analysis will therefore focus on exclusion strategies, which match the most frequent demands of activists, and on what can be expected in terms of impact on the target company (Section 5) and on the investor's portfolio (Section 6). Before that, we will trace the history of divestment movements, evaluate public expectations (Section 3) and underline the intrinsic differences between good and bad ESG performers (Section 4).

3 DIVESTING: WHAT CAN WE EXPECT?

The simplest strategy, and undoubtedly the most popular among activists is that of excluding bad ESG performers from an investment portfolio. This is the exclusion strategy, also referred to as negative screening. Exclusion is therefore a socially motivated investment strategy, in which asset owners or managers decide not to invest in companies that engage in activities that are considered

reprehensible. In this section, we review the history of divestment movements based on ESG criteria as well as public expectations from this strategy.

3.1 HISTORY OF DIVESTMENT MOVEMENTS

The first divestment movements appeared in the 19th century and were mainly initiated by faith-based organisations. They mostly focused on social issues and on the exclusion of **sin stocks** in investment policies – namely stocks of companies

engaged in the alcohol, tobacco, gambling, or weapon industries (Eccles, et al., 2020). Later, historical events, such as the Vietnam War, and social considerations, such as civil rights and the anti-apartheid movement, gave further impetus to divestment movements by integrating these components into the decisions of politically active investors.

Box 1: Screening strategies and relevance

UN PRI (2020) identifies and defines different types of screening strategies: negative screening, positive screening, and norm-based screening.

Exclusion or negative screening	Investors exclude certain sectors, companies or securities from their portfolio by comparing the relative ESG performance to that of industry peers or by relying on specific ESG criteria on an absolute basis. Filtering can be based on product categories (e.g. weapons or tobacco), activities (e.g. animal testing), business practices (e.g. corruption) or geographies (Swiss Sustainable Finance, 2021).
Best-in-class or positive screening	Investors overweight companies with superior ESG performance – typically using their ESG score – compared to industry peers or a category and underweight or exclude those with poorer performance.
Norm-based screening	Investors select companies against minimum standards of business practices based on international norms such as UN treaties, the Kyoto Protocol, the Declaration of Human Rights and OECD guidelines.

In 2018, exclusion was by far the most widely used screening strategy globally, with USD 19,771 bn of assets applying it. It has, however, recently been overtaken by **ESG integration**, a more sophisticated strategy including ESG risks and opportunities within traditional investment decisions (Global Sustainable Investment Alliance, 2021). The two other screening strategies – and particularly positive screening – are both significantly less applied globally compared to other responsible investment strategies (Figure 1). On the Swiss sustainable investment market, ESG engagement, a component of **active ownership**, is taking the lead and re-ranked exclusion as the third most used strategy by responsible investors in 2020 (Swiss Sustainable Finance, 2021). Although exclusion seems to be losing steam, it still represents a substantial portion of sustainably invested assets worldwide, which justifies the need to study its real impact on the activities of target companies and on investors' portfolios.

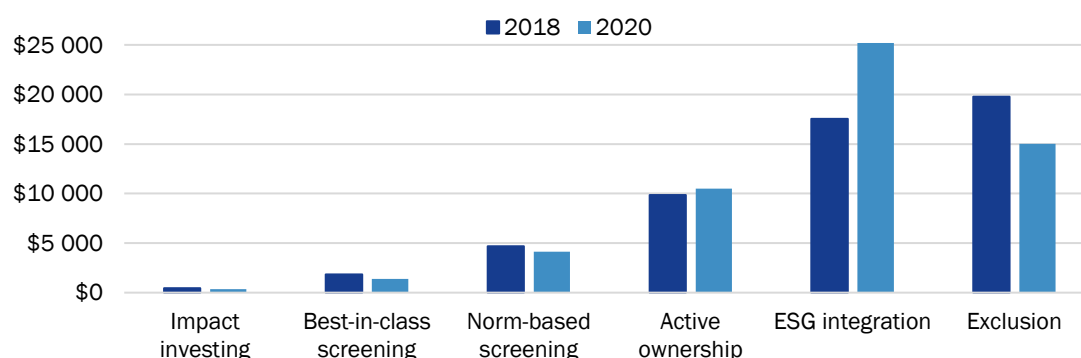
Governance concerns emerged in the context of the 1929 stock market crash and the Great Depression of the 1930s, leading to the introduction of standardised financial reporting. They grew further as a result of the 2007 subprime crisis and the subsequent Great Recession which both showed the importance of good governance practices (Townsend, 2020). The lack of transparency, controls and ethics ultimately came at a significant cost to investors. As a result, board independence, supervisory committees and political donations have become material issues for traditional investors and exclusion criteria for companies deemed too risky in that regard.

Environmental issues began to take on greater importance in the late 1980s, particularly with the Exxon Valdez oil spill and the creation of **CERES**¹ (Townsend, 2020). Divestment from fossil fuels was one of the main responses to climate risks, starting in the early 2010s with the ever-growing pressure from student groups

(Ansar, et al., 2013). Exclusion based on environmental criteria would allow investors to reduce their exposure to climate change-induced risks, such as legal and regulatory risks, while showing their opposition to environmentally unfriendly practices.

Investor awareness of environmental, social and governance risks, and consequently the use of exclusion strategies, are both leading to an increasingly high demand for ESG data. This has stimulated the publication of ESG risk-related information by companies. It has also fostered the creation and growth of an entire industry of ESG data vendors within a relatively short period of time (Eccles, et al., 2020). This trend has further simplified the process of selecting screening strategies, but has also brought to light other issues, such as the divergence of data between vendors and the resulting assessments (Berg, et al., 2019).

Figure 1: Sustainably invested assets per strategy worldwide in 2020 and 2018 (USD bn)



For more information on these strategies, see Glossary. Source: Global Sustainable Investment Alliance (2020).

¹ Coalition for Environmentally Responsible Economies (CERES) – see Glossary.

3.2 WHAT TO EXPECT FROM EXCLUSION?

One could expect that excluding poor performers from investors' portfolios would deprive the firms of funding and would therefore force them to discontinue their operations. By reinforcing stigmatisation and amplifying financing constraints, exclusion would generate financial difficulties for the targeted company. In other words, exclusion by investors would have two main objectives, namely:

- 1 **To alter business practices**
 - by depriving the firm of funding; and
 - by reinforcing stigma with the goal of increasing operating costs; and
- 2 **To reduce risk and improve portfolio performance.**

But are these intended effects achieved in practice and what factors should be considered?

Altering business practices through exclusion would directly impact the real economy and would involve two components: a rationing effect, depriving the business of funding, and a reinforcing of the stigma induced by a public announcement of the exclusion strategy.

If the objective is to **deprive the company of funding**, exclusion should be applied to the **primary market**, as it is where companies raise the new funds needed to develop their activities through the issuance of shares or bonds. Exclusion on the **secondary market** does not seem relevant in this regard since it is purely a transfer of ownership, generally of securities of publicly traded companies, from an investor concerned by a particular issue to an investor who is intrinsically neutral.

Divestment movements both on secondary and primary markets send strong signals to market players when they are made public. The impact of the ensuing **stigmatisation** therefore deserves to be considered. In particular, the investor applying an exclusion strategy could hope that it will impact the **cost of capital** of the company and thus incentivise it to alter its strategy. The two terms of this hypothesis need to be confirmed: under what conditions is the impact on the cost of capital significant and in what cases is this increase likely to lead to changes that are favourable to the desired objective?

In parallel, excluding bad players would **improve portfolio performance**, thanks to a decreased risk of stranded assets, which are assets undergoing unforeseen depreciation caused by new regulations, the energy transition or declining technology development costs. However, apart from the fact that these are standard considerations for all investors, not just those with environmental concerns, the exclusion also restricts the investment universe and implies additional portfolio constraints, which would theoretically worsen portfolio performance.

In any case, it is legitimate to wonder if the objective of short-circuiting or boosting the operations of a company does not come with other costs that should be considered. By focusing on one aspect, such as a company's carbon footprint, does the exclusion not result in favouring the 'E' over the 'S' of ESG? Does it really integrate the professional retraining challenge of workers whose mine has been shut down? Is it truly promoting the transition to a more sustainable economy? If we look at green innovation, for instance, it appears that the fossil fuel sector, which is explicitly excluded by many ESG funds, accounts for 14% of the top 50 filers of green patents in

the US (Cohen, et al., 2020)². The question arises as to whether it is wise to cut off funding to these initiatives solely based on negative screening. Without further analysis, it is therefore difficult to identify

the direct and indirect impacts of the exclusion on investors' portfolio performance and risk, on the target company, and therefore on the real economy.

4 INTRINSIC DIFFERENCES BETWEEN GOOD AND BAD ESG PERFORMERS

Before discussing what is known about the impact of exclusion on the targeted companies' operating conditions and on investors' portfolios, it is important to assess the intrinsic differences resulting from a company's ESG strategy, particularly from the point of view of its cost of capital. The literature argues that there is generally a negative relationship between sustainability performance and cost of capital, particularly at the environmental level: managerial decisions that improve the environmental footprint and decrease the risks of firms turn out to be positively valued by investors, thus reducing the firm's cost of capital (Gianfrate, et al., 2018). The difference in the cost of capital between a responsible and a non-responsible firm is explained either by a change in the **cost of equity** or by a change in the **cost of debt**.

4.1 COST OF EQUITY

The cost of equity, which corresponds to the return of company *E* stock, can be defined using the Capital Asset Pricing Model (CAPM) as follows:

$$r_E = r_f + \beta_E(r_m - r_f)$$

$$\text{where } \beta_E = \frac{\text{cov}(r_E, r_m)}{\sigma_m^2} = \rho_{m,E} \frac{\sigma_E}{\sigma_m}$$

with r_f the risk-free rate, r_m the average return on the capital market, β_E company *E*'s **systemic risk**, $\rho_{m,E}$ the correlation between the market and company *E*'s stock return, and σ_m and σ_E the volatility of the market and of company *E*'s stock return respectively.

Empirically, investors seem to require higher returns for stocks with lower environmental ratings than for those with good environmental practices (Chava, 2014; Bolton & Kacperczyk, 2021a)³. How

² Exxon Mobil, Honeywell International, Royal Dutch Shell, BP, Conoco Phillips, Chevron and US Oil are listed in this ranking with a total of 6,969 green innovation patents held in 2017 (Cohen, et al., 2020). It could be seen as an attempt to change the image of the company or to slow progress by filing patents without developing them. Nevertheless, it seems that the intentions are good and that "traditional energy organizations are among the largest investors in green technologies [...], produce [...] the largest volume of electricity from renewable energy sources and [participate in] the largest private-public projects." (Delaloye, 2021).

³ In et al. (2019) suggest different results: taking a long position in low-carbon firms and a short position in high-carbon firms would generate positive abnormal returns. Bolton & Kacperczyk (2021a), also focusing on the returns of companies listed in the US, explain this difference in results by the control variables applied. The latter control for industry, firm characteristics, and risk factors, and analyze the effects of Scopes 1, 2 and 3 separately.

to explain this result? Three complementary and therefore non-exclusive explanations are likely.

Explanation 1: Higher beta and compensation for corresponding risk

The CAPM assumes that the only firm-specific determinant of the cost of equity is its measure of systemic risk β_E . Sharfman & Fernando (2008) find that bad environmental risk management would increase stock volatility and the firm's **beta**. The higher cost of capital observed for bad ESG performers could therefore be justified by an increase in the risks linked to the climate transition, owing to developments and the prospects in terms of regulation. This would simply be a compensation for the increase in underlying systematic risk and would imply – which is relevant for the investor – that the stock risk-adjusted return is not affected. Blitz & Swinkels (2020), however, find it unlikely that the covariance between a company's returns and the market, and therefore its beta, are affected by occasional exclusions by a certain group of investors. The risk measured by the beta is affected by the intrinsic characteristics of the company, not by the occurrence of exclusion strategies.

Explanation 2: Imperfect measures of risk and beta

Environmental risks are rather low-frequency risks: seeing one's assets immobilised as a result of climate regulations or changes in behaviour is a relatively infrequent event in the short to medium term. A complementary

explanation could be that risks are imperfectly measured by the usual volatility indicators. It is a recognised fact that asset price behaviour may deviate from that predicted under rational market assumptions, namely when market participants have particular expectations concerning discrete and very infrequent events⁴. Thus, the higher cost of equity of a poor performer compared to its peers could very well correspond to an increase in the underlying risk that is poorly measured by the beta of the stock in question. In this case, the stock return could exceed that predicted by the measured beta, suggesting, mistakenly, the presence of an abnormal return or **alpha**.

Explanation 3: Unpopularity of poor performers and demand effects

A company's popularity can be an indicator of demand for its stock and therefore a determinant of its share price and cost of equity. In essence, the CAPM is a theory based on financial considerations which assumes that the systemic risk represented by the company's beta is the only determinant of the stock return. Beyond the risk factor, however, the demand for a stock could also be influenced by the intrinsic preferences of investors in favour of or against certain companies. If these preferences are too widely shared for their consequences to be arbitrated by indifferent investors, they are likely to affect stock returns and therefore the cost of equity. Ibbotson, et al. (2018) indeed reported that companies with competitive disadvantages in terms of sustainability are less popular than would

⁴ Here we refer to what is known as the peso problem. The low frequency of these events implies that they are under- or unobserved in the observation sample.

be justified on the basis of their beta and tend to outperform companies with such advantages. In other words, these stock returns must be above the norm to convince enough investors to include them in their portfolio. On the contrary, the stock returns of good performers would be abnormally low because they are desirable to most investors for reasons other than their purely financial characteristics.

4.2 COST OF DEBT

What can be said about debt financing? Companies identified as poor performers and targeted by shareholder divestment movements can also turn to debt financing⁵.

However, debt financing appears to have the same characteristics as equity financing: cost of debt and therefore returns are higher for non-responsible firms.

An analysis by Bauer & Hann (2010) focusing on corporate environmental management and its implications for bond investors suggests that borrowers engaged in environmentally risky activities are subject to a premium on their cost of debt and lower credit ratings. A similar dynamic can be observed on the bank credit market. Creditors tend to charge a higher interest rate on loans to companies with low environmental performance than on loans to companies generating significant revenues from environmentally

beneficial products or services (Chava, 2014; Delis, et al., 2021). A carbon premium for **Scope 1 emissions** also seems to have emerged since the 2015 Paris Agreement (Ehlers, et al., 2021). It would amount to an average of 3 to 4bps and rise to 7bps for companies with the highest levels of GHG emissions⁶.

These observations could be the result of the investors' risk assessment, notably linked to societal and regulatory developments, or of a compensation for the stigma surrounding a company whose behaviour is not well perceived by the market.

Intrinsic differences [...] represent a handicap for the investor expecting to "do well by doing good".

In conclusion, the cost of capital and therefore returns appear to be higher for companies with poor practices, particularly environmental ones. This intrinsic difference between good and bad performers implies a significant additional operational cost for the companies concerned. The question remains open as to whether exclusion, through a rationing of capital on the primary markets or by reinforcing a stigmatisation trend, could exacerbate these operational costs. From an investor's perspective, the intrinsic differences underlined need to be taken into account in the strategic asset allocation. As such, they also represent a handicap for the investor expecting to "do well by doing good".

⁵ Debt financing is even largely used in the fossil fuel industry (Danthine & Hugard, 2022 - to be published)

⁶ Basis points: 1bps is equivalent to 0.01%.

5 IMPACTS OF EXCLUSION ON THE TARGET FIRM

There is little evidence linking exclusion and changes in ESG practices (Kölbel, et al., 2020). However, we can identify three channels through which a change in portfolio allocations is likely to lead to changes in a target company's operating conditions and potentially in its ESG strategy. First, if a divestment movement builds a sufficient following, the corresponding sell orders can have an impact on the company's share price. This direct effect has an instantaneous impact on returns, which may have consequences on managerial compensation. Second, divestment may initiate or reinforce stigma which will influence not only other investors but also the company's stakeholders as a whole. This second channel is indirect, as it is strictly informational in nature. Third, the company's financing conditions, including access to external funding, may be impacted; this is true only when exclusion is applied to primary or bond markets.

Intuitively, several conditions seem necessary for exclusion to have a real impact in particular on the secondary market; that is through the shock on asset prices and through stigmatisation:

Condition 1: The divestment announcement must be public

For an exclusion strategy to trigger changes, it must be publicly announced. This information, and ideally the reasons behind the decision to exclude, must be made public in order to have an impact on the share price, to significantly reinforce stigmatisation or to potentially increase the cost of capital.

Condition 2: The divested capital must be sufficiently large

The exclusion effect on asset prices and on stigmatisation increases with the capital applying the strategy (Heinkel, et al., 2001; Fama & French, 2007). If the number of investors implementing a similar exclusion strategy reaches a certain threshold, such that the change in the firm's cost of capital is greater than the cost of reform, then the excluded firm would have an incentive to improve its practices. In their model, Heinkel, et al. (2001) even establish, based on certain assumptions, that at least 20% of investors must apply the exclusion for the target firm to implement a reform with a cost equivalent to 5% of annual cash flows. In most cases, this would require the investor implementing the strategy to be part of a broad coalition.

Taking these conditions into account, we will now analyse what the implications of the three above-mentioned channels are, the responses they may prompt from the target company and the factors determining these responses (Figure 2).

5.1 SHOCK ON ASSET PRICES AND MANAGERIAL INCENTIVES

An institutional investor's divestment announcement sends a negative signal to the market, which may result in a decrease in the company's stock value in the short term (Atta-Darkua, 2020; Dordi & Weber, 2019). These deviations could in turn create incentives for companies that do not meet inclusion criteria. Indeed, a study by Edmans, et al. (2012) suggests that managers would be much more sensitive

to non-fundamental stock price changes, such as those induced by investors' sustainability preferences ⁷. Therefore, appropriate managerial incentives, whether monetary or non-monetary, could push firms to adopt better ESG practices. However, the potential responses are many and the results very uncertain – if not non-existent when the cost of reform is substantial.

5.1.1 Determinants of managerial incentive effectiveness

The effectiveness of this mechanism in changing company practices will depend on various determinants: i) the cost of reform, ii) the type of screening strategy implemented and iii) the management compensation schemes and horizon.

5.1.1.1 Costs of reform

For management, exclusion is more likely to incentivise companies to improve their ESG practices if the costs of implementing the reforms needed to comply with

Figure 2: Exclusion impact channels, implications, and responses of the target firm

	Channels	Conditions	Implications	Potential responses	Response determinants
Secondary market	1. Shock on asset prices	<ul style="list-style-type: none"> Significant divested capital 	Creation of managerial incentives	<ul style="list-style-type: none"> No response Implementation of better ESG practices <i>Greenwashing</i> Social value modification Stigma dilution 	<ul style="list-style-type: none"> Cost of reform Type of screening strategy Management compensation scheme and horizon
	2. Strengthening of the stigmatisation movement	<ul style="list-style-type: none"> Public announcement 	Damage to reputation and influence		<ul style="list-style-type: none"> Stakeholder preferences Strategic and political agenda Cost of reform
Primary market	3. Capital rationing	Limited access to external financing		<ul style="list-style-type: none"> Internal financing Financing by neutral investors Abandonment of the project to be funded 	<ul style="list-style-type: none"> Preferences of other investors Age and size of the target company Operating environment

Note: The Channels column defines the three channels through which a change in portfolio allocations is likely to lead to changes in the operating conditions of a targeted company. The second column recalls the conditions necessary for the exclusion to have a real impact. The next three columns represent respectively the implications for the target firm from each channel, the responses they may generate and the factors determining the target firm's responses. Prolonged capital rationing (channel 3) could also generate responses similar to channels 1 and 2 in the long run.

⁷ The study focuses on the impact of non-fundamental changes in the share price on the probability of a buyout; something that managers are likely to try to avoid when it is hostile.

investor requirements are lower than the potential gains from doing so or than the costs of a business-as-usual scenario (Kölbel, et al., 2020). Environmental and social reforms are arguably more costly than governance reforms. Economically attractive environmental measures do exist, however, and can have a significant impact. Developing an environmental strategy, setting and monitoring environmental targets, or appointing an environmental officer can increase a company's investment in cleaner and more energy-efficient technologies (De Haas, et al., 2021). According to a World Economic Forum (2020) report, most companies – even in carbon-intensive sectors – could also achieve energy and process efficiencies of around 20% at little or no cost.

What could influence managers' behaviour is probably the threat of a future exclusion by a strong coalition of investors [...].

5.1.1.2 Best-in-class exclusion vs sectoral exclusion

The exclusion strategy implemented will also determine the impact of a share price decline on managerial incentives. Indeed, an outright exclusion of an entire sector will have little or no effect on managerial incentives. Good remuneration practices link bonuses to the relative performance of

the share, typically seen in comparison with companies in the same sector, and not to absolute performance; this is to neutralise the effects of the overall market which do not justify particular remuneration. A **best-in-class** approach tending to favour certain companies to the detriment of others in the same sector would therefore be more effective⁸.

5.1.1.3 Management compensation schemes and horizon

Managerial incentives arising from divestment campaigns can be double-edged depending on the structure of the compensation packages and the horizon of management. Executives rewarded for high prices in the short term will be more receptive to demands from investors threatening to divest. In contrast, those rewarded for high returns will, paradoxically, have the opposite incentives because firms subject to exclusion generally have higher returns (Section 4). Also, in the context of fixed-value share plans, the lower the share value, the higher the number of shares that can be granted to management. Management will therefore be rewarded for what responsible investors consider to be bad practices. Finally, managers with short-term interests, i.e. who sell their shares regularly, will be more affected by the effect of the exclusion on prices. It is therefore in the management's financial interest to mitigate externalities and consider the

⁸ Best-in-class rather than sectoral exclusion also appears to be more promising from an investor's perspective. Fahlenbrach & Jondeau (2021) investigated several ways to reduce the carbon footprint of the SNB's US equity portfolio while preserving its financial performance. They concluded that excluding the most carbon-intensive companies and reinvesting in the least carbon-intensive companies in the same sector would reduce the total financed carbon emissions by 22%, without impacting the financial performance of the SNB portfolio.

demands of divestment campaigns only when they wish to sell their shares (Davies & Van Wesep, 2018).

We can add that in finance, bygones are bygones. What could influence managers' behaviour is probably the threat of future exclusion by a strong coalition of investors rather than the observation of a price movement resulting from past share sales – over which managers no longer have any control – or the very uncertain prospect of a revaluation of the share price in the event of a change in environmental policy⁹.

5.2 STIGMATISATION

Exclusion does not only affect the target company and its operations through a shock on the share price. When it is announced publicly, exclusion also reinforces stigmatisation, which will have an impact at several levels and will prompt different types of responses from the company. The effects mentioned below are the result of stigmatisation linked to the intrinsic characteristics of poor performers. Exclusion only underlines and possibly makes this stigma more visible. The effectiveness of this indirect, purely informational channel is far from certain, especially since a variety of counterstrategies are available to target companies.

5.2.1 The impacts of stigmatisation

Stigma can affect operating conditions at various levels, namely by damaging the company's reputation in the eyes of

stakeholders and by weakening its political influence.

5.2.1.1 *Reputation and stakeholder relationship*

Companies that are heavily criticised in the media suffer from a bad image that often drives away suppliers, subcontractors, customers, and employees. This preference for socially responsible companies can, among other things, be reflected in wages. Companies with a very good environmental reputation seem to have an advantage in terms of salary expenses, of the order of -10% according to Krueger, et al. (2020b). Workers with a preference for a socially responsible employer therefore demand additional compensation for working for a socially reprehensible company (Nyborg & Zhang, 2013). This is an important factor that needs to be considered by companies wanting to attract and retain talent, and thus remain competitive.

5.2.1.2 *Political influence*

Some companies can use their lobbying power to benefit from favourable conditions, such as indirect subsidies, and to delay the implementation of binding regulations. Between 2010 and 2018, the five largest oil and gas companies and industry lobby groups spent EUR 251.3m on European lobbying activities (Tansey, et al., 2019). A successful stigmatisation movement could result in a loss of political influence for the company and the industry in which it operates (Braungardt, et al., 2019).

⁹ The engagement strategies typically characterised by this escalation process will be investigated in a follow-up study.

5.2.2 Responses to stigma

A successful exclusion campaign – affecting the target company's image and its relationship with stakeholders and the political world – could therefore lead neutral equity and bond investors to reassess the company's future net cash flows downwards and thus create a long-term impact on the value of the company and an incentive for management to react to stigmatisation (Ansar, et al., 2013). However, the effectiveness of this mechanism remains uncertain because of the responses that may be embedded in the culture of the target industry. Several types of responses may be employed: companies may admit their wrongdoing and commit to taking corrective action (conform), they may choose not to react to the stigma (avoid), or they may respond in a counterproductive manner by attempting to change social values (alter) or shape public perceptions (shape)¹⁰ (O'Donovan, 2002). For example, the fossil fuel industry seems to prefer alter and shape techniques (Verdure, 2019). Companies associated with stigmatised industries can also divert public attention and dilute stigma by diversifying. This mechanism, known as stigma dilution, has been used by tobacco companies which have diversified into food processing, thereby reducing their level of public disapproval (Vergne, 2012).

The company's responses will depend on various determinants. As with channel one, the first relates to the cost of reform. The company will comply with demands which will entail relatively low costs (Section

5.1.1.1). The second concerns stakeholder preferences. If stakeholders prefer to work with suppliers or employers who are more concerned about their sustainability, the target will have more incentives to implement new or better practices to retain its customers or employees. Finally, the company's response will also depend on its strategic and political agenda and its ability to pivot to meet investor demands.

Although stigmatisation de-normalises the target industries for stakeholders and may diminish their power to influence politics, the impact of the investor remains highly uncertain, especially given the responses of the players identified in the literature and their own characteristics.

5.3 DIRECT IMPACT ON FINANCING: RATIONING EFFECT

The analysis of this last channel has to consider the observations made in Section 4. The conclusion was that the intrinsic characteristics of poor performers expose them to a higher cost of capital compared to good performers. What can an exclusion strategy shared by a large proportion of investors add to this reality beyond the asset price shock mentioned in Section 5.1?

Undoubtedly, if exclusion is applied in primary markets, it may lead to capital rationing and make it impossible for the company to undertake the reprehensible investments planned. This rationing effect will naturally encourage the target

¹⁰ Changing the public's values refers to entering the debate for educational purposes, whereas shaping the public's perception of the company can be done by reiterating and publishing its past good or ethical performance, in other words by using greenwashing (O'Donovan, 2002).

companies to turn to other sources of financing, i.e. towards neutral creditors or internal financing, or to abandon the project. In the longer term, it may also prompt the implementation of new practices to address the stigma and limit negative financial and operational consequences. What responses are they most likely to choose? This will depend on several factors, including creditor preferences, firm characteristics, and their operating environment.

5.3.1 Preferences of other creditors

As a first step, firms rejected by bond and equity investors are likely to turn to private markets, on the one hand, or to bank loans or alternative creditors who do not share the same sustainability preferences, on the other. This bypass potential implies a transfer of the bad risks carried by excluded firms to these other creditors – who might be willing to reject this legacy if it becomes too large. And indeed, the pressure of exclusion movements seems to be starting to spread to commercial banks as they apply preferential rates for responsible companies (Chava, 2014) and are therefore reducing this bypass potential to a certain extent.

5.3.2 Target firm characteristics

A firm's characteristics will play an important role in determining how rationing will affect its practices. For example,

younger, smaller companies that are mainly active in local markets are more affected by external financing constraints (Beck, et al., 2006). Large multinationals generally do not depend on this type of capital as they have access to a larger pool of potential investors and more often have sufficient cash flow to cover their investments.

5.3.3 Operating environment

As a result, a small number of banks stopping debt financing would hardly limit the projects of targeted companies, except in constrained operating environments. In an environment with low financial depth and therefore with less mature market infrastructures, borrowers will be particularly affected by the shrinking of their already small investor pool. In difficult political or technical environments, as in the case of offshore oil platform developments, companies will also be less able to undertake large-scale investment projects (Ansar, et al., 2013).

The effectiveness of exclusion in improving ESG practices through financing conditions may vary¹¹. Companies that are young, small, local, or operate in difficult political, economic, or technical environments will be more impacted by financial constraints in the primary market and therefore be more likely to adopt better practices. In contrast, financial pressure will be much lower for large cap and old

¹¹ Secondary market exclusion could affect financing conditions through a premium on the cost of capital. With his Sustainable Capital Asset Pricing Model, Zerbib (2020) defines an exclusion effect based on ESG criteria, resulting from the reduction of the investor base for excluded securities. This is based on the concept of a super risk premium and local segmentation premium associated with the restricted access to certain types of assets on the capital markets. The study conducted over the period from 2007 to 2019 with an exclusion market comprising the alcohol, tobacco and gaming industries, puts the exclusion effect at +1.43% per annum - a value of the same order of magnitude as the outperformance observed in the study by Hong & Kacperczyk (2009). From this study, it is nevertheless difficult to conclude that the exclusion generates a premium additional to that associated with the intrinsic characteristics of sin stocks mentioned in Section 4.

multinationals, that are internally financed or have access to a larger investor pool. Finally, we might ask whether, even when it involves capital rationing, exclusion is really desirable, e.g. in the context of the energy transition. A study by De Haas, et al. (2021) argues that financial constraints such as loan refusals seem to hamper the affected firms' investments in low-carbon technologies. In other words, exclusion

primarily affects the ability of the companies willing to finance their transition to a low-carbon economy. This would not be without consequences from an environmental perspective: the decrease in GHG emissions and other atmospheric pollutants appears to be significantly slower for industrial companies subject to these financial constraints.

6 IMPACTS OF EXCLUSION ON THE INVESTOR'S PORTFOLIO

Let us now examine how exclusion strategies can impact portfolio risk and performance. Exclusion advocates argue that this strategy considers the long-term risks associated with poor ESG practices that would not be properly reflected in current market prices; as a result, long-term risk-adjusted returns would be at least as high. However, exclusion restricts the investment universe and implies additional portfolio constraints, which in theory can only deteriorate portfolio performance. Therefore, the challenge for investors is to know how to integrate exclusion into their portfolio while minimising the potential financial and non-financial costs associated with these new constraints.

The empirical literature shows mixed results regarding the financial performance of portfolios implementing ESG exclusion. Some underperform, some outperform, some have no significant impact on performance (Widyawati, 2020). Based on this observation, we first discuss the short-term impact of the exclusion announcement on asset prices, then we elaborate on the current popularity and historical performance of such ESG strategies. Finally, we examine whether a potential overperformance is likely in the **steady state**.

6.1 IN THE SHORT TERM: IMPACT ON THE ASSET PRICE

An institutional investor announcing the exclusion of a specific company from its portfolio sends a negative signal to the market, resulting in a decrease in the company's value in the short term. For instance, companies excluded by the Norwegian Government Pension Fund-Global lost an average of 1.72% of their market capitalisation in the first five days after the exclusion announcement (Atta-Darkua, 2020). Slightly longer-term impacts have also been observed following exclusion events. They are more prevalent for recent events, suggesting a shift in investor perception as the exclusion announcements gain legitimacy (Dordi & Weber, 2019).

6.2 ESG PORTFOLIO POPULARITY AND MOMENTUM EFFECT

The more widespread use of ESG-criteria-based exclusion can reinforce its direct effects and create a momentum effect. ESG practices have indeed become increasingly popular in investor portfolios

in recent years. In 2019, exclusion approaches based on ESG criteria were applied to 65% of Swiss sustainable investments (Swiss Sustainable Finance, 2020), compared to 53% in 2018 (Swiss Sustainable Finance, 2019)¹². Recent observations show that in terms of performance, sustainable equity and bond funds outperformed their traditional peers in 2019 and continued to do so in the first half of 2020, withstanding the Covid-19 shock better than traditional funds (Morgan Stanley, 2020). At the same time, some studies suggest that strategies buying high ESG-performing stocks and selling low ESG-performing ones have generated substantial positive abnormal returns (Kempf & Osthoff, 2007; Gompers, et al., 2003). How can we explain the outperformance or “non-underperformance” of exclusion strategies?

6.2.1 ESG portfolio specific exposures

ESG portfolio and fund exposures could explain their outperformance. According to Alessandrini & Jondeau (2020), exclusion strategies can generate regional, sector and risk factor exposures, while increasing the ESG score and leading to an overperformance, temporarily at least. The study shows that the ESG-based exclusion portfolios were particularly exposed to the technology sector and European companies and underweighted the financial and energy sectors as well as US and emerging market companies over the 2007 to 2017 investment period.

6.2.1.1 Technology vs energy

The superior performance of the technology sector and the weaker performance of the energy sector in recent years could explain the results referred to above. Demers, et al. (2021) even note that the share price resilience of companies in these sectors at the beginning of 2020 is more closely related to a high level of investment in intangible assets – typical of technology companies – than to ESG performance.

6.2.1.2 Concentration

ESG funds seem to have a higher concentration. In his ESG fund performance analysis, Winegarden (2019) shows that ESG funds have a higher exposure to their top ten holdings compared to the overall index, at 36.7% and 28.8% of the portfolio respectively. This proportion rises to 48.7% for ESG funds specialising in clean technology.

These sector and company bets could therefore explain the observed outperformance. Alessandrini & Jondeau (2021) suggest, however, that this explanation could be insufficient. Their analysis shows that, over the 2007 to 2018 period, it was possible to maximise the portfolio’s ESG score while limiting concentration and sectoral, regional and risk factor exposures and to generate a risk-adjusted performance at least as high as the benchmark, and this was true across a wide range of ESG criteria and regions (Alessandrini & Jondeau, 2021). These biases do not, therefore, seem to fully

¹² In 2020, exclusion was applied to 64% of Swiss responsible portfolios but is now the third most used sustainable investment strategy in Switzerland, surpassed by engagement approaches (Swiss Sustainable Finance, 2021).

justify the outperformance observed for ESG exclusion funds.

6.2.2 Asset price and momentum

So why, then, do we observe higher returns for good ESG performers than for poor ESG performers, whereas theory suggests the opposite (Section 4)? The impact of exclusion strategies on prices as well as the momentum effect that their adoption can create seem to be the missing pieces of the jigsaw. Investor preferences for assets with better sustainability profiles and, inversely, the exclusion of bad performers in the recent past result in differentiated developments in the demand for securities and impacts on asset prices. Thus, Gibson Brandon, et al. (2020) estimate that, following a +10% shock to their demand, securities with an environmental score one standard deviation higher would see their price increase by about 2.2% annually¹³. Given their preferences, investors have paid increased attention to ESG strategies in recent years, which could in turn imply an overestimation of the expected returns for these strategies over the observation period. Based on this hypothesis, Bruno, et al. (2021) show that during periods of low attention, the alpha of ESG strategies is up to four times lower than during periods of high attention, such as the one we are currently experiencing¹⁴.

6.3 AT THE STEADY STATE: WHAT TO EXPECT

Thus, the enthusiasm around sustainable stocks and their current performance could be a transitory effect and fade as efficient financial markets return to a steady state. Below, we discuss the historical and expected performance in that regard as well as the transition process towards the steady state.

6.3.1 Historical performance of securities targeted by exclusion

As discussed in Box 1, companies with very good ESG scores have a lower cost of capital than those with low ESG scores. This mechanically implies that the returns of companies with low ESG scores will exceed those of companies with higher ESG scores in the steady state. We can observe this phenomenon in the case of sin stocks and large CO₂ emitters, as well as the opposite situation in the case of **green bonds**.

6.3.1.1 Sin stocks

In practice, sin stocks, which are typically targeted by exclusion, show historical performance with positive abnormal returns – between +25 and +30bps per month compared to similar companies even when adjusted for risk factors (Hong & Kacperczyk, 2009). These positive abnormal returns can be interpreted as an exclusion premium or as a reward for investors willing to take reputational risk.

¹³ A result that contrasts with the impact of exclusion announcement of the Norwegian Government Pension Fund-Global underlined in Section 6.1.

¹⁴ High attention periods are characterised by high capital flows into sustainable funds.

6.3.1.2 Large CO₂ emitters

Investors also expect compensation for the risks associated with poor environmental practices: high carbon emitting companies have higher returns even when controlling for performance drivers such as size or price-to-book ratio (Bolton & Kacperczyk, 2021b; Chava, 2014). There is even evidence that this carbon premium has been increasing since the 2015 Paris Agreement, is present in Asia, Europe and North America and concerns both direct and indirect emissions. More specifically, a one-standard-deviation variation in Scope 1 and **Scope 3 emissions** would generate an annual premium of 2.5% and 4.1% respectively (Bolton & Kacperczyk, 2021b).

6.3.1.3 Green bonds

On the bond market, similar observations have been reported: green bonds are less profitable. In their literature review focusing on green bond premia (greenium), MacAskill, et al. (2020) report that, for the secondary market, most studies suggest an average greenium between -1 and -9bps. 14% of the identified analyses still indicate a positive greenium.

In other words, the current enthusiasm for ESG investing and this transition period seem to be creating a momentum effect in favour of good performers. Nevertheless, it is questionable whether it will persist in the steady state given the behaviour of sin company and large emitter securities as well as that of green bonds.

6.3.2 Transition towards the steady state

But how is the transition to the steady state likely to take place? Bruno, et al (2021) describe the theoretical principle of attention shifts and its consequences for ESG strategies. During a period of high

attention, such as the one we are witnessing at present, sustainable stock demand, prices and returns increase, creating a momentum effect. However, once the period of high attention is over, we can expect ESG returns to be lower than the long-term average: the previously observed increase in prices should lead to lower expected returns. To illustrate this phenomenon, Bolton & Kacperczyk (2021b) take the practical example of the tobacco industry and explain how a similar dynamic is occurring in the energy industry today. In the 1960s, the publication of reports describing the harmful effects of cigarettes on health was followed by an adjustment of the industry's valuation to much lower multiples. After this revaluation, and still today, tobacco companies show high returns. It seems that history is repeating itself, but this time in the energy sector: the demand for low-emission assets is increasing compared to high-emission ones and green companies are valued at higher multiples than polluting ones (Bolton & Kacperczyk, 2021b). According to the two authors, we should expect several waves of revaluations in the energy sector, given the more aggressive attitudes of investors towards CO₂ emissions.

When a new equilibrium is reached, investors should expect responsible companies to offer lower returns for the reasons discussed above: a lower cost of capital – that benefits companies – and thus a lower ROE – that is less beneficial to the investor. The key takeaway from this discussion and observations is that it is presumptuous to assume that committing to the transition to a sustainable economy through exclusion strategies will never come at the cost of performance. This reality has to be communicated to final investors, e.g. pensioners, and those managing the funds on their behalf. In line with the behaviour of employees who seem

to be willing to receive a lower equilibrium wage for their sustainability preferences (Krueger, et al., 2020b; Nyborg & Zhang, 2013), it is to be hoped that responsible

investors to be willing to bear the financial consequences of their beliefs.

7 CONCLUSIONS

What about the objectives of divestment?

Let us go back to our original question: what can investors concerned about their impact do when faced with a poor ESG performer? Exclusion is one possible strategy that will have an impact on both the target company and the investor's portfolio. But does it achieve the two objectives outlined in Section 3.2, namely of altering the practices of the target company, on the one hand, and reducing the risks and improving the performance of the investor's portfolio, on the other?

Objective 1: To alter business practices

Exclusion could alter corporate practices through managerial incentives, stigmatisation, and capital rationing.

However, its effectiveness, particularly through managerial incentives and stigmatisation, is limited, variable and dependent on various factors. Two conditions are essential for the first two channels to have an effect: first, investors must publicly declare their intention to divest and, second, the amount divested must be sufficiently large or even very large. Both conditions are necessary to create sufficient pressure on prices, which could incentivise management to improve business practices, as well as to raise stakeholder awareness. An internal exclusion policy is unlikely to have much impact on financial markets and the public debate. Exclusion is more likely to change the company's operations through managerial incentives, depending on the

costs of reform, the type of screening applied, and the compensation scheme and time horizon of the management. As for stigmatisation, even though it de-normalises target industries for stakeholders and may diminish their political influence, its effectiveness remains uncertain given the historical responses of the players involved. These responses include stigma dilution or greenwashing.

It is through capital rationing on the primary market – the third channel – that the exclusion could undoubtedly have the most significant effect. It can ultimately deprive the company of funding and prompt it to change its practices, depending on its size and operating environment. Companies that are young, small, local or operate in difficult political, economic or technical environments will be more affected by capital rationing and therefore more likely to comply with investor demands. In contrast, for large cap and older multinationals, which are internally funded or have a larger pool of potential investors, the financial pressure will be much lower, if not totally ineffective, and the impact of exclusion reduced or eliminated.

Objective 2: To reduce risk and improve portfolio performance

Good and bad ESG performers differ intrinsically, and notably in terms of cost of capital, and therefore in terms of financial returns. Investors seem to expect higher

returns for stocks with poor environmental ratings. These differences between good and bad ESG performers need to be integrated into the investor's strategic asset allocation.

Bad ESG performers, such as sin companies, are intrinsically different from good ESG performers: they have a higher cost of capital and therefore higher returns. This premium can simply be a compensation for the risk taken, even though it is imperfectly measured by traditional indicators, but can also be explained by investors' intrinsic non-financial preferences. How, then, can we explain why ESG portfolios applying negative screening have performed at least as well as traditional portfolios in recent years? This result can be explained by portfolio concentration or sectoral, regional, and risk factor exposures; but this is not always the case. The missing pieces of the jigsaw are likely to be price movements and a momentum effect in favour of good ESG performers – both of which are temporary in nature. It is unlikely that these observations will persist indefinitely. When a new equilibrium is reached, i.e. when the momentum effect fades, green companies are likely to have lower returns; an inevitable counterpart of a lower cost of capital. There would therefore be a financial cost to being a responsible investor in the steady state. This cost is partially offset for first movers, in the ESG strategy popularity phase.

Key takeaways

Although exclusion could be a first step towards a more comprehensive ESG strategy, this analysis concludes that it fails to achieve its target both in terms of impact on the company's activities and on investor performance. This is before even considering the undesirable consequences that the financial constraints imposed by exclusion might also have. They could

discourage investments in process improvements or in low carbon technologies (De Haas, et al., 2021), create divestment wave risk and thus disrupt financial stability (Jondeau, et al., 2021), or worsen poverty in some regions without having a real impact on the environment (Ramachandran, 2021).

We would like to conclude with four takeaways:

- 1 **Finance is not all powerful.** We should not expect too much at the risk of being massively disappointed. If we really want finance to play its role, pressure must be exerted where it can really make a difference. Having an impact on the real economy, including through divestment, requires good judgement.
- 2 **It is essential to distinguish between primary and secondary markets.** Exclusion should therefore be particularly focused on primary and bond markets, where companies finance their projects. Exclusion on secondary markets should be used as measure of last resort and as a sanction in an engagement process in which there is little or no hope of achieving the desired result.
- 3 **A more thorough and dynamic ESG analysis is required** as a prerequisite for a possible exclusion decision. In particular, it is essential 1) to balance the environmental and social impact, by taking into account all three components of ESG; and 2) to reward good attitudes in a dynamic and non-static approach, based on the company's strategy, e.g. for a decarbonisation pathway consistent with a zero-carbon economy, and to show a willingness to include companies that were initially excluded back into the portfolio.

- 4 Exclusion strategies are more likely to be ineffective and the prospects for achieving impact are much better with shareholder engagement strategies (Danthine & Hugard, 2022 - to be published). A portfolio with brown assets but whose owners are committed to altering the strategies of the companies they own is undoubtedly far more environmentally friendly than a so-called green portfolio that excludes all bad ESG performers and does not care about their impact. As a result, the carbon footprint is an inappropriate and counterproductive measure of a portfolio's environmental quality. Instead of judging a portfolio's sustainability by its current ESG score or carbon footprint, it would be wiser to consider its potential to change the economy of tomorrow.

GLOSSARY

Active ownership – A strategy in which investors exercise their influence to promote the long-term success of the company through dialogue or voting rights.

Alpha – A measure of a security or portfolio's abnormal returns.

Best-in-class or positive screening – A strategy overweighting companies with superior ESG performance – typically using their ESG ratings – compared to industry peers or a specific category and underweighting or excluding those with poorer performance.

Beta – A measure of stock or portfolio volatility and systemic risk compared to the overall market.

Bps – Basis points. 1bps is equivalent to 0.01%.

CERES – *Coalition for Environmentally Responsible Economies*. An organisation encompassing investors and interest groups addressing sustainability challenges and aiming to integrate sustainability in capital markets.

Cost of capital – From an investor's perspective, the return required by the capital provider. It is calculated as a weighted average of the company's cost of debt and cost of equity.

Cost of debt – The interest rate paid by the company on its debt.

Cost of equity – The rate of return required by equity investors, usually calculated using the CAPM.

ESG integration – The inclusion of ESG risks and opportunities in traditional financial analysis and investment decisions.

ESG score – A measure of a company's environmental, social and governance performance. Many rating systems exist and differ in their methodology, sometimes resulting in significant discrepancies for the same company.

Exclusion or negative screening – A screening strategy that excludes certain sectors, companies, or securities from the investor portfolio by comparing their relative ESG performance to that of industry peers or by relying on specific ESG criteria on an absolute basis.

Green bonds – Fixed income securities raising capital for projects with environmental purposes such as renewable energy, mass transit or water technology projects.

Impact investing – A strategy aimed at resolving social or environmental issues by allocating the invested capital to communities that are generally underserved.

Norm-based screening – A screening strategy that selects companies taking into account minimum standards of business practices based on international norms such as UN treaties, the Kyoto Protocol, the Declaration of Human Rights and OECD guidelines.

Primary market – The market on which securities are first issued and sold to the public. Investors contribute to the company's capital through the purchase of shares or bonds.

Secondary market – The market on which securities are traded between investors after issuance.

Scope 1 emissions – GHG emissions directly related to the resources owned and controlled by a company, i.e. related to the manufacture of a company's products or its services.

Scope 2 emissions – Indirect GHG emissions from the generation of the energy purchased to manufacture a company's products or to provide the services offered by the company.

Scope 3 emissions – A company's indirect GHG emissions – aside from Scope 2 emissions – associated with the life cycle of its products outside of their direct

production. They include upstream and downstream emissions e.g. generated during the transportation of raw materials or when the product is being used.

Sin stock – The stock of a publicly traded company involved in or associated with an activity considered immoral or unethical. Targeted sectors include alcohol, tobacco and gaming among others.

Steady state – A state of equilibrium and of system stability.

Systemic risk – Risk affecting the entire market. It is non-diversifiable and does not relate to a specific stock.

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