



Shifting from Shareholder to Stakeholder Model: Using Sustainable Investment to Align Profit with Purposefulness

Sustainability and money often seem like opposite ends of the pole – sustainability the way to a purer world, money its tainted obstacle. Analysts often struggle to integrate sustainability into investing; but we need money to reach our greener goals. This case provides a tool to integrate sustainability into investment, driving the analyst to view the whole rather than the parts, and to steer funding to sustainable companies without sacrificing return. It is a journey into a company's true value as opposed to financial tourist highlights and, ultimately, a way of aligning profit with purpose.

Introduction

This case is an exercise in sustainable investment. Placing finance in the context of sustainability, it provides a tool to integrate sustainability into investment and credit analysis by connecting it to strategy, competitive position, business models and value drivers. It is meant to deepen your understanding of environmental, social and governance (ESG) integration in business by applying sustainable finance insights to a real life example, and so develop the skillset needed to be able to steer funding to sustainable companies without sacrificing return. In the exercise, you will be required to select a public company of your choice in any industry and, using the list of questions in the tool, evaluate the selected company's transition preparedness – in our eyes, the essence of corporate sustainability – and potential investor worth for the 21st-century firm.

The case first outlines the wider context of sustainable development – what they probably haven't been teaching you at business or economics school, so to speak – as well as the Sustainable Finance framework we've developed, before providing the exercise and tool.

From Steam Age to Doughnut Age: The New Evolution

One of the challenges in today's business world is that our economic models were developed in an age when natural resources were abundant and carbon emissions limited. No environmental concerns were factored into these models – only labour and capital. In a similar vein, traditional financial theory has not accounted value to natural resources beyond their near-term cash flows.

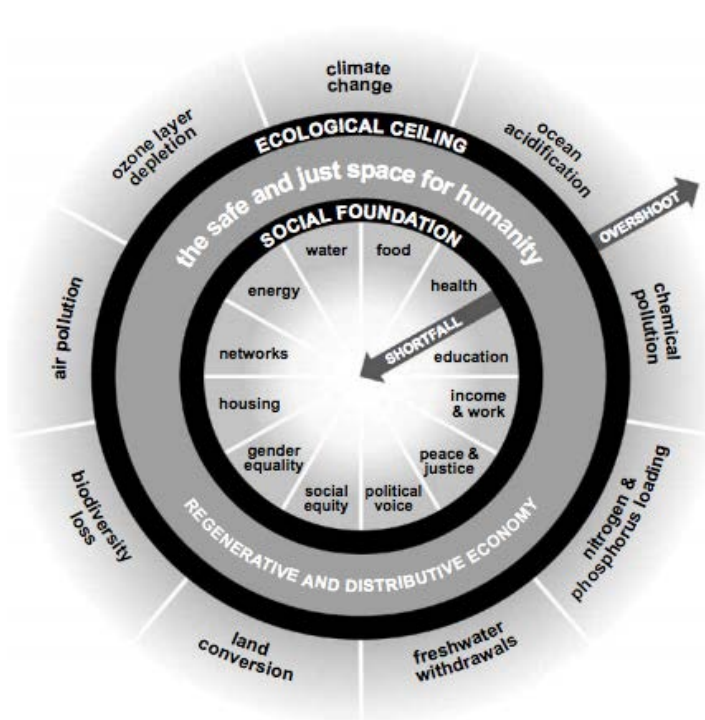
Conventional wisdom tells us that these models are no longer tenable. They have led to policies that are degrading the living world on a scale that threatens all of our futures. Deconstructing the character of 'rational economic man', Oxford economist Kath Raworth has created a 21st-century 'Doughnut Economics model', which summarises the social foundations and planetary boundaries in a doughnut-shaped compass, and shows how the safe and just space for humanity lies between the social foundation of human well-being and the ecological ceiling of planetary pressure.

Professor Dirk Schoenmaker, Dr. Willem Schramade, and Jacqueline Nolan from Rotterdam School of Management, Erasmus University, prepared this teaching case.

The case is based on desk research. It is written to provide material for class discussion rather than to illustrate either effective or ineffective handling of a management situation.

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Exhibit 1: The Doughnut: the safe and just space for humanity



The environmental ceiling consists of nine planetary boundaries, as set out by [Steffen et al \(2015\)](#), beyond which lie unacceptable environmental degradation and potential tipping points in Earth systems. The twelve dimensions of the social foundation are derived from internationally agreed minimum social standards, as identified by the world's governments in the Sustainable Development Goals in 2015. Between social and planetary boundaries lies an environmentally safe and socially just space in which humanity can thrive.

Source: Raworth (2017)

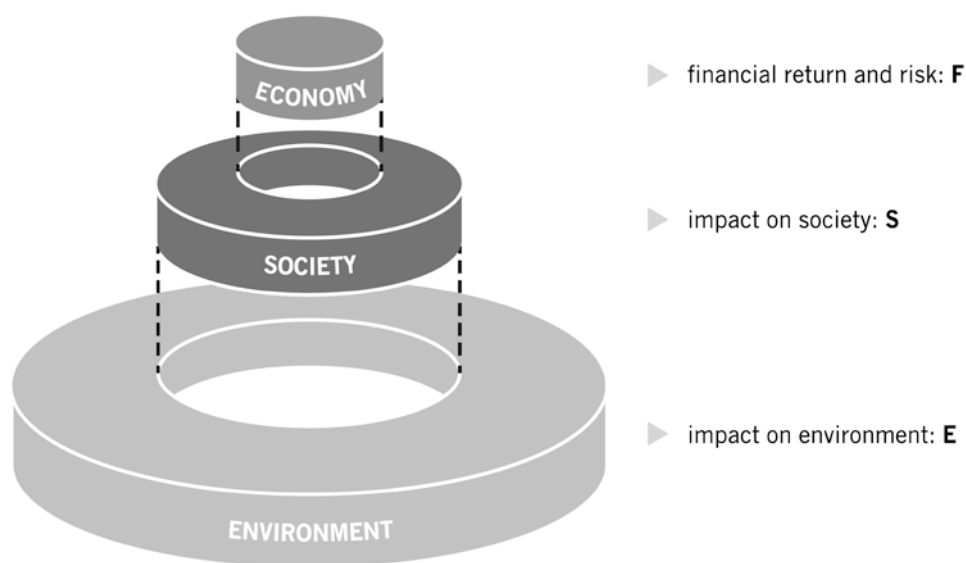
The concept 'sustainable development' often has an association with climate change or things ecological or environmental, but it is actually an integrated concept – comprising environmental, social and economic dimensions. By nature, it signifies a shift in mindset from short-termism to a more long-term approach. When it comes to finance and economics, it is this shift in mindset – from viewing business in terms of the market and immediate financial gains to something more enduring (and taking broader considerations into account when calculating an investee company's worth) – that is at the heart of sustainable transformation. In the words of Massachusetts Institute of Technology lecturer and cross-sector innovator Otto Scharmer:

"What is dying and disintegrating is a world of MeFirst, bigger is better, and special interest group-driven decision making that has led us into a state of organised irresponsibility. What is being born is less clear. It has to do with shifting our consciousness from ego-system to eco-system awareness – an awareness that attends to the well-being of all."

The framework for managing sustainable development used in this exercise is illustrated by **Exhibit 2**. The foundation tier is the environment: here the ecological impact is optimised, a liveable planet being a precondition or foundation for humankind to thrive. Next, at the level of society, the impact of business and financial decisions is optimised to create an inclusiveness where access to economic prosperity is open to everyone. And finally, the financial orientation supports the idea of profit maximisation by organisations alongside economic growth of nation states,

so financial return and risk trade-off are optimised. This means that when evaluating where a company stands on sustainability, you will need to seek a balance in the combination of the environmental, social and financial aspects – and to track the interconnectedness between them – to get the bigger picture. So, the traditional 'finance head' or Raworth's 'economic rational man' will have to be able to shift out of the graphs and figures (the content) and view the firm from a more holistic angle: And not only is it a question of the whole being greater than the sum of the parts, but identifying and finding the parts (to analyse) can be part of the challenge.

Exhibit 2: Managing sustainable development



Source: Schoenmaker and Schramade (2019)

Connecting Finance to Sustainability

Sustainability and money often seem like opposing poles; indeed, money is widely viewed as an obstacle to a better world. Sustainable finance looks at how finance (investing and lending) interacts with economic, social and environmental issues, and how it can assist in making strategic decisions on the trade-offs between sustainable goals.

Analysts often struggle to integrate sustainability into investment analysis, partly because sustainability is so context-specific and hard to capture in ratings and other standardisations. The increasing availability of ESG ratings has spurred a steep rise of sustainable investing: Sustainable assets under management in Europe have risen from €2.7 trillion covering 18 percent of total assets under management in 2007 to €11.1 trillion covering 53 percent in 2015 (Eurosif, 2016).

These ratings aim to measure how companies score on several ESG factors.

However, they tend to give a static view of where companies are on their sustainability efforts. The next stage of sustainability analysis in this exercise is assessing the transition preparedness of companies, which is by definition forward-looking. To know where a company stands, you will need to apply fundamental analysis of its strategy and business. Fundamental equity investing has been identified as being most suitable and promising (as opposed to quant and passive investing) for ESG integration and other approaches to sustainability. Whereas quant and passive investing rely solely on published performance results, fundamental analysis will take you to the figures behind the scenes as it looks at a company's business models and strategy; it examines its products, services and degree of technological development, and, in this way, enables you to uncover what's happening on the social and environmental fronts: Where is the company today in the sustainability transition? What is its competitive position in the industry? Is the company preparing itself for the sustainability transition, or not?

In **Table 1**, we show the framework behind this exercise: The evolution from Finance-as-usual to the ambitious Sustainable Finance 3.0 ideal highlights the broadening from *shareholder value* to *stakeholder value* or triple bottom line – people, planet, profit – and reflects the shift in thinking from short-term profit towards long-term value creation. Importantly, the horizon naturally broadens and evolves from short term to long term along the stages. (See *Appendix 1* for more detailed explanation)

Table 1: Framework for Sustainable Finance

Sustainable Finance Typology	Value created	Ranking of factors	Optimisation	Horizon
Finance-as-usual	Shareholder value	F	Max F	Short term
Sustainable Finance 1.0	Refined shareholder value	$F \gg S \text{ and } E$	Max F subject to S and E	Short term
Sustainable Finance 2.0	Stakeholder value (triple bottom line)	$I = F + S + E$	Optimise I	Medium term
Sustainable Finance 3.0	Common good value	$S \text{ and } E > F$	Optimise S and E subject to F	Long term

Note: F = financial value; S = social impact; E = environmental impact; I = integrated value.
At Sustainable Finance 1.0, the maximisation of F is subject to minor S and E constraints.

Source: Schoenmaker and Schramade (2019)

Doughnut Thinking on a Broad Horizon: Sustainable Investment Tool

The list of questions that forms an investment analysis tool below starts from the connection between the two worlds of sustainability and finance – business models;

then it briefly addresses the headline financials, namely the company's value drivers, before taking a deeper dive into strategy and sustainability. Finally, it goes back to the value drivers and the investment case to see how they have been affected by the sustainability analysis.

A one-tool-fits-all approach might seem at odds with the commonly held view that sustainability is highly context-specific, but actually, that context specificity only results in different answers, different priorities and different follow-up questions: the departure point for each company is the same. Organisations that opt for an early transition to a low-carbon and more circular economy to overcome environmental challenges allow for a gradual adjustment of production and consumption patterns (with Unilever or Philips serving as good examples), while a late transition will cause sudden shocks and may lead to stranded assets, with lost productive value. Many companies have even used the challenges presented by sustainability to look at themselves in new ways, and to repurpose or reposition themselves. For example, Interface, the world's largest producer of modular carpet (a carbon-intensive industry), decided to adopt a new environmental vision in 1994 through a fundamental perspective change. Asking themselves, 'If nature designed an industrial process, what might it look like?', it set the company towards a direction which brings sustainability into all its dimensions by mimicking nature (renewable energy, eliminating waste, recycling and reusing materials), and creating value for society and the environment.

Besides the list of questions which constitute the investment analysis tool, the case provides links to two completed examples – French-Dutch airline company Air France-KLM and healthcare producer Royal Philips. Using our analysis investment tool, we found that Air France-KLM has scored low on transition preparedness, creating too much value in the social sphere (for pilots particularly), while destroying value in financial and environmental terms; Philips, on the other hand, has scored high on transition preparedness.

Before completing the list of 26 questions on sustainable finance for ESG integration (Assignment 1):

- Read the following book (or materials with similar theories) as a preparation: *Principles of Sustainable Finance*, Schoenmaker, D. and Schramade, W., (2019) at Oxford University Press, with particular reference to Chapter 1 'Sustainability and the transition challenge', Chapter 5 'Strategy and intangibles – Changing business models' and Chapter 8 'Equity – Investing with an ownership stake'.
- Go through the list of sustainable finance questions for ESG integration (the analysis tool in the next section). Then consult the following two case studies of Royal Philips and Air France-KLM with completed answers, published on the Erasmus Platform for Sustainable Value Creation (<https://www.rsm.nl/erasmus-platform-for-sustainable-value-creation/home>):

https://www.rsm.nl/fileadmin/Images_NEW/Erasmus_Platform_for_Sustainable_Value_Creation/Case_Study_Sustainable_Finance_Royal_Philips.pdf

https://www.rsm.nl/fileadmin/Images_NEW/Erasmus_Platform_for_Sustainable_Value_Creation/Case_study_KLM.pdf

Philips is an example of a company which scores high on transition preparedness, while Air France-KLM faces some strong sustainability headwinds as it see-saws between some value creation on the social front and clear value destruction on the financial and environmental fronts.

- Lastly, please visit the following link to the United Nations' 2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals (SDGs), the framework for our case studies on the SDGs:
<https://sustainabledevelopment.un.org/?menu=1300>

Assignment Questions:

1. *Using the list of 26 questions in the tool on page 8, select a company of your choice and evaluate the company's transition preparedness and investment attractiveness. You can use publicly available materials, such as annual and sustainability reports (or an integrated report in the case of some organisations), as well as contacting the company if you wish. For companies that lag in sustainability reporting and the sustainability of their products or services, it may be difficult to answer some of the questions; but that is telling information, too.*
2. *Once you have done research, gathered information needed and completed your analysis, how would you compare the sum of your facts/findings with the overall impression you get of the company's transition preparedness?*
3. *Suppose you were an investor, would you invest in this company? Why or why not? You have answered this question from the perspective of an analyst, so now imagine you are the investor. Would you change perspective?*
4. *Suppose you were in the role of advisor to this company, which strategies might the firm take to improve its transition preparedness? Which obstacles would you foresee in taking those steps?*
5. *Would you say the company is part of the problem or part of the solution in the transition to a sustainable economy? Substantiate your answer.*

List of sustainable finance questions for ESG integration:

For the company you have selected, please

- Look up its most recent annual report and sustainability report – and provide web links to the following:
 - Annual report
 - Sustainability report
 - Other useful reports
- Then answer the below questions. Where appropriate, please refer to the company's reporting with document name and page number. Please keep your answers concise and provide a clear explanation. Last, but not least, avoid falling into the pitfall of being overly positive towards the company you have chosen to analyse. You need to critically review the company's reports.

1. Business model & competitive response

- I. How would you describe the company's business model?
- II. How strong do you rate the company's competitive position?
- III. What trends affect the company's business model and competitive position?

2. Value drivers (part 1)

- I. Sales growth: What seems to be a normal sales growth for the company? And what are the drivers of sales growth?
- II. Margins: What seems to be a normal profit margin (EBIT or EBITDA) for the company? And what are the drivers of that margin?
- III. Capital: How capital intense is the company? What do you think is the firm's cost of capital? What is the firm's return on invested capital (ROIC)?
- IV. Please sketch how you see the company's value drivers going forward.

3. Sustainability

- I. Purpose: What is the company's mission / purpose / raison d'être? In what way does the company create value for society? How does it get paid for that value creation?
- II. Stakeholders: Who are the company's main stakeholders? Please fill out the stakeholder impact tool.

Material issue	Stakeholder 1	Stakeholder 2	Stakeholder n
Short term goals			
Long term goals			

How the company helps those goals				
How the company hurts those goals				

- III. Externalities & impact: Does the company generate serious externalities? Are they positive or negative? How do you assess the chances of these externalities being internalised? Thresholds: How does the company perform versus the planetary boundaries?
- IV. SDGs: Which of the SDGs (if any) does the company help achieve? Which negative SDG exposures (if any) does the company have?
- V. Impact: To what extent can the company's impact be measured? Does the company report on its impact? How can its impact reporting be improved?
- VI. Material issues: What are the most material ESG factors, i.e. which issues are most critical to the success of the company's business model? Please fill out the given matrix, discussing for each of these most material ESG factors (a) how the company performs on it; (b) whether the company derives a competitive (dis)advantage from it; (c) how they might affect the value drivers.

Material issue	Performance	Competitive edge?	Impact on value drivers?
Issue 1			
Issue 2			
Issue 3			
Issue 4			

- VII. Sustainability reporting: How do you assess the company's non-financial reporting? Does the company (claim to) do Integrated Reporting (IR)? To what extent do you see the seven principles of IR reflected in the company's reporting?

4. Strategy

- I. How would you describe the strategy of the company?
- II. To what extent does that strategy take into account the company's most material ESG issues? Please link to your answer to Section 3 above on sustainability.
- III. Is the strategy consistent with the company's purpose?

- IV. What does long-term value creation look like? What are the best KPIs for it?
- V. What does management compensation look like? To what extent does management have long-term incentives? And are those incentives aligned with long term-value creation?
- VI. How does the company communicate its long-term value creation with shareholders and stakeholders?

5. Value drivers (part 2)

- I. Given all of the above questions & their answers, how do you rate the effect of material sustainability issues on the value drivers going forward? Per value driver, please indicate whether you see a positive, negative or neutral effect. Explain why.

Value driver	Positive/negative/neutral	Explanation
Sales growth		
Profitability		
Capital		

- II. How would this affect your valuation of the company?

6. Investment conclusions

- I. In conclusion, how well is the company prepared, in your opinion, for the transition to a more sustainable economic model?
- II. How attractive do you find the company as an investment?
- III. What did you find most surprising when answering the above questions?
- IV. If you were to engage with the firm, what topics would you address?

Appendix 1:

From Risk to Opportunity: Framework for Sustainable Finance

The concept of sustainable finance has evolved as part of the broader notion of business sustainability over the last decades. In terms of value, the evolution highlights the broadening from *shareholder value* to *stakeholder value* or triple bottom line – people, planet, profit.

In traditional finance, shareholder value is maximised by looking for the optimal financial return and risk combination, the 'finance-as-usual' approach illustrated in Table 1. Finance-as-usual is consistent with the argument of Friedman (1970) that 'the business of business is business', while it is on the onus of the government to take care of social and environmental goals, and to set the rules of the game for sustainability. Next, the ranking indicates a shift from economic goals first to societal and environmental challenges (the common good) first. The final stage looks at the creation of common good value.¹ Importantly, the horizon naturally broadens and evolves from short term to long term along the stages.

Table 1 shows the typology for sustainable finance on four aspects:

1. Value created
2. Ranking of the three factors
3. Optimisation method
4. Horizon

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Note: F = financial value; S = social impact; E = environmental impact; I = integrated value. At Sustainable Finance 1.0, the maximisation of F is subject to minor S and E constraints.

Source: Schoenmaker and Schramade (2019)

¹ To avoid the dichotomy of private versus public goods, we use the term common good referring to what is shared and beneficial for all or most members of a given community.

Sustainable 1.0: Refined profit maximisation

In Sustainable Finance 1.0 above, shareholder value or profit maximisation is still the guiding principle for the organisation, though with some refinements. A first step may be that financial institutions avoid investing in, or lending to, so-called 'sin' companies. These are companies with very negative impacts. In the social domain, they include companies that sell tobacco, anti-personnel mines and cluster bombs, for example, or companies that exploit child labour. In the environmental field, classic examples of very negative impacts are waste dumping and whaling. More recently, some financial institutions have started to put coal and even the broader category of fossil fuels on the exclusion list.

A slightly more positive variant of the refined shareholder value approach is if financial institutions and companies put systems in place for energy and emissions management, sustainable purchasing, IT, building and infrastructure to enhanced environmental standards, and all kinds of diversity in employment. The underlying objective of these activities remains economic: Though introducing sustainability into business might generate positive side-effects for some sustainability aspects, the main purpose is to reduce costs and business risks, to improve reputation and attractiveness for new or existing human talent, to respond to new customer demands and segments, and thereby to increase profits, market positions, competitiveness and shareholder value in the short term.

Box 1 contains the formal objective function for the refined profit maximisation approach of investors.

Box 1: Refined profit maximisation

Investors optimise the financial value FV of their portfolio by increasing profits and decreasing their risk (i.e. the variability of profits), while avoiding excessive negative social and environmental impact by setting a minimum level SEV^{\min} . The objective function is given by:

$$\max FV = F(\text{profits, risk}) \quad \text{subject to } F'_{\text{profits}} > 0, F'_{\text{risk}} < 0, SEV \geq SEV^{\min} \quad (1)$$

Where FV = financial value = expected current and discounted future profits, and SEV = social and environmental value. F'_{profits} is the partial derivative of F with respect to the first term, and F'_{risk} with respect to the second term. This optimisation can be used by investors in a mean-variance framework to optimise their portfolio and by banks and corporates in a net present value framework to decide on financing new projects.

Sustainable Finance 2.0: Internalisation of externalities

In Sustainable Finance 2.0, financial institutions explicitly incorporate the negative social and environmental *externalities* into their decision-making. Over the medium to long-term horizon, these externalities might become priced (e.g. a carbon tax) and/or might impact negatively on an institution's reputation. Incorporating the externalities thus reduces the risk that financial investments become unviable. This

risk is related to the maturity of the financial instrument, and is therefore greater for equity (stocks) than for debt (bonds and loans). On the positive side, internalisation of externalities helps financial institutions and companies to restore trust, which is the mirror image of reputation risk.

Attaching a financial value to social and environmental impacts facilitates the optimisation process among the different aspects (F, S, E). Innovations in technology (measurement, information technology, data management) and science (life-cycle analyses, social life-cycle analyses, environmentally extended input-output analysis, environmental economics) make the quantification and monetisation of social and environmental impacts possible. However, integrated value optimisation can lead to perverse outcomes: the negative environmental impact of deforestation, for example, can be offset by large economic gains – in other words legitimising destruction. To avoid these outcomes, we incorporate in equation 2 the constraint that the social-environmental value cannot be worsened compared to its initial value. Another caveat is the inherent uncertainty (e.g. underlying climate scenarios) that makes pricing difficult. A final issue is participation. Producers could involve stakeholders in the application of the integrated value methodology to form a more inclusive and pluralist conception of risk and values for social and environmental impacts. Box 2 provides the formal objective function of investors for optimising the integrated value of their portfolio.

Box 2: Internalisation of externalities

To internalise the social and environmental externalities, investors optimise the integrated value IV of their portfolio. The integrated value is the sum of the financial value, the social value and the environmental value: $IV = FV + SV + EV$.

Investors thus optimise the integrated value IV of their portfolio by increasing their integrated profits, and decreasing their risk (i.e. the variability of integrated profits), while not worsening their social and environmental impact SEV. The objective function is given by:

$$\max IV = F(\text{integrated profits, integrated risk}) \quad \text{s.t.} \quad F'_{\text{integr. profits}} > 0, \quad F'_{\text{integr. risk}} < 0, \\ SEV_{t+1} \geq SEV_t \quad (2)$$

See Box 1 for the explanation of the variables. SEV_{t+1} = next period social and environmental impact. In line with the integrated value methodology, not only profits but also risk is assessed in an integrated way (i.e. integrated across the three values), which includes the covariance between the profits.

Sustainable Finance 3.0: Contributing to Sustainable Development

Sustainable Finance 3.0 moves from risk to opportunity. Rather than avoiding unsustainable companies from a risk perspective, financial institutions invest only in sustainable companies and projects. In this approach, finance is a means to foster sustainable development, for example by funding healthcare, green buildings, wind farms, electric car manufacturers and land-reuse projects. The starting point of Sustainable Finance 3.0 is a positive selection of investment projects on their potential to generate social and environmental impact; creating an inclusion list instead of an exclusion list as in Sustainable Finance 1.0. In this way, the financial

system serves the sustainable development agenda in the medium to long term.

The question that then arises is how the financial part of the decision is taken. An important component of sustainable development is economic and financial viability. Financial viability, in the form of a fair financial return.

What is a *fair financial return*? Of the respondents to the Annual Impact Investment Survey (GIIN, 2016), 59 per cent primarily target risk-adjusted, market-rate returns. Of the remainder, 25 per cent primarily target returns below market-rate that are closer to market-rate returns, and 16 per cent target returns that are closer to capital preservation. So the great majority pursues returns at market rate or close to it, while a small group accepts lower returns for sustainability reasons.

In Box 3, the key change is that the role of finance turns from primacy (profit maximisation) to serving (a means to optimise sustainable development). It moves from the front row in equation 1 to the back row in equation 3.

Box 3: Contributing to sustainable development

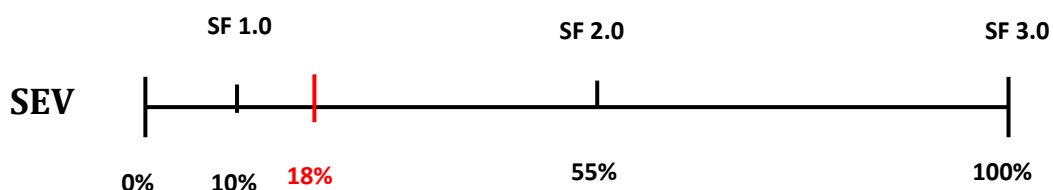
To foster sustainable development, investors optimise the social-environmental impact or value SEV of their portfolio, which is the sum of the social and environmental value $SEV = SV + EV$, by increasing their impact, and decreasing their risk (i.e. the variability of impact), subject to a minimum financial value FV^{\min} . The objective function is given by:

$$\max SEV = F(\text{impact}, \text{risk}) \quad \text{s.t.} \quad F'_{\text{impact}} > 0, \quad F'_{\text{risk}} < 0, \quad FV_{t+1} \geq FV_{t+1}^{\min} \quad (3)$$

See Box 1 and 2 for the explanation of the variables. The financial viability or minimum financial value can be presented as follows: $FV_{t+1}^{\min} = (1 + r^{\text{fair}}) FV_t^{\min}$, where $r^{\text{fair}} \geq 0$ is a fair financial return for one period.

Where are organisations on the social-environmental axis? A fair approximation is that, at the beginning of 2019, financial value was dominant, and social-environmental value was incorporated at various levels (see Exhibit 3). The vast majority of financial institutions were at Sustainable Finance 1.0; about 35 percent of financial institutions were somewhere between Sustainable Finance 1.0 and 2.0; the group of financial institutions adopting Sustainable Finance 3.0 constituted less than one percent. This produces a social-environmental level of 18 per cent for the overall financial system.

Exhibit 3: Levels of social-environmental value (SEV)



Note: This graph measures the level social-environmental value.

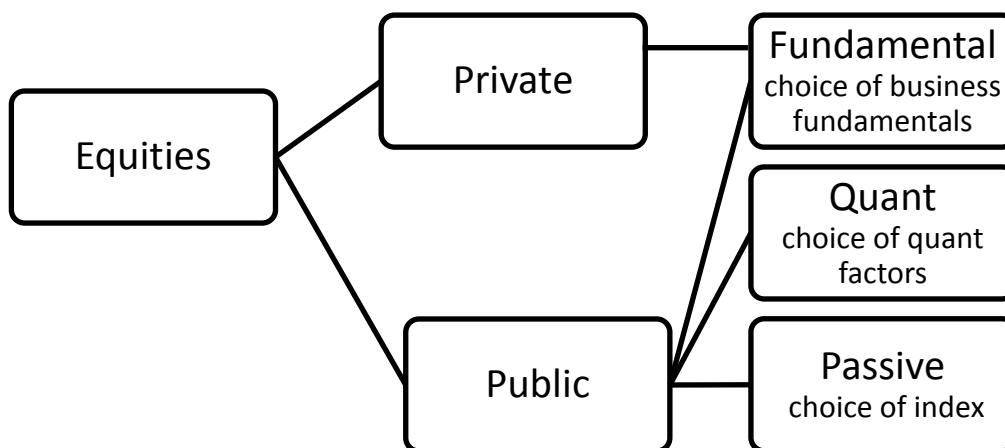
Appendix 2: Integrating Sustainability into Fundamental Equity Investing

Stock markets trade public equity. Yet, within organisations, most equity starts as private and remains private.

Public equity investing can be classified as passive or active. Passive investing refers to investments in indices or Exchange Traded Funds, and active investing tends to be either quant (based on factors in a model or algorithm) or fundamental (based on an analysis of a company's financial statement, business model, value drivers, employee satisfaction). Private equity investing also needs fundamental analysis of investee companies for the bigger picture; this is because private equity lacks standardised data, ratings and daily pricing.

Precisely because it can't be reduced to a few market metrics, understanding private equity investing and using a fundamental analysis approach is a good starting point for our sustainable finance framework (in particular, Sustainable Finance 2.0 and 3.0; see Appendix 1) and for assessing a company's transition preparedness. Fundamental equity strategies bring you on a company's journey – a more real experience as opposed to showing financial tourist highlights – and are best suited for environmental, social and governance (ESG) integration.

Exhibit 4: Classification of equities investing



Fake Objectivity

There are two main types of valuation methods to determine the value of a company's equity: relative and absolute. **Relative valuation** relies on direct (asset) comparisons with similar companies in the industry and price earnings of its peers; but it's hard to find a company with identically corresponding geographies, segments and customers. The Discounted Cash Flow (DCF) model is a commonly used **absolute valuation** method. It circumvents the relative valuation problem of finding direct asset comparisons, but it has a minus side – it relies on assumptions to be made on future free cash flow (FCF) and on the cost of capital; this, in turn, leads to a behavioural problem as analysts often simply extrapolate recent historical

numbers or short-term forecasts into infinity (while the company is exposed to internal and external changes which impact business and performance). Some finance people argue short-termism isn't an issue, as stocks incorporate over a decade's cash flows in their pricing; in our eyes, this is a kind of fake objectivity, as the cash flow forecasts can be a mere extrapolation of the short term.

To analyse a company's preparedness for a sustainable economy, corporate finance as opposed to asset pricing is what counts. It can be split into the following value drivers (Koller, Goedhart & Wessels, 2015), which give useful insights on how efficiently and successfully a company is run, and on the factors driving the value drivers:

- **Sales** – can be further split into volumes and price;
- **Margins** – can be analysed by type of costs, and before or after depreciation, taxes, etc.;
- **Capital** – can be further split into the cost of capital (discount rate) and the uses of capital (capex, working capital).

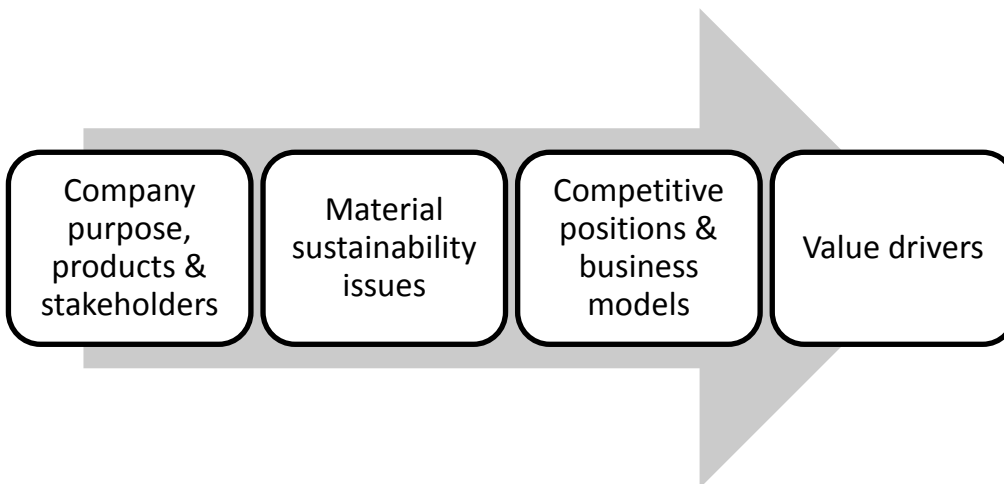
This type of analysis traces the sources of competitive advantage that determine how fast a company grows and how profitable it can sell its goods and services. And this is where the link to sustainability comes in, as intangible assets on material ESG issues, such as intellectual or social capital, tend to be the underlying value drivers. Take a mining company as a case in point: One mining company might have much lower costs than its peers because it engages well with and manages local stakeholders, and so has fewer delays and/or production losses, a good safety record and a more committed workforce; another mining company might also have lower costs, but these could be due to unattractive employee benefits (low pay, bad pension or social security schemes). The risks involved should be factored into the company's cost of capital.

Business Models: The Missing Link

There's a growing body of empirical evidence proving that sustainability matters to equity pricing.

Business models are the missing link between ESG and finance: Understanding them is crucial for financial analysts and ESG analysts alike, and for understanding both long-term value drivers for an equity valuation, and a firm's position on ESG factors. Actually, in most cases, creating shareholder value also involves an increase in societal value. The line of causality to shareholder value starts from a company's social purpose of providing valuable products or services at affordable prices. Shareholder value then is a reflection of degree of satisfaction of customers or other stakeholders. In relation to the SDGs transition, a key question might be: As a whole, is a company part of the problem or part of the solution?

Exhibit 5: How sustainability matters for shareholder value



Source: Schramade (2016)

Many investors struggle to integrate ESG factors into their fundamental analysis, where 'integration' is limited to using ESG scores to reduce the investment universe. This is just scrapping the ESG surface. We suggest a four-step Value Driver Adjustment (VDA) approach for integrating ESG into fundamental equity investing:

1. **Identify and focus on the most material issues:** Material ESG factors can have a substantial impact on business models and value drivers; ideally, you need a materiality analysis of the industry of the investee company.
2. **Analyse the impact of these material ESG factors on the individual company,** not only on an absolute basis, but also relative to peers: Does the company have a competitive edge in managing a given ESG issue, or does it the reverse?
3. **Quantify competitive advantages to adjust for value driver assumptions:** So here the analyst will make deliberate, often significant, adjustments to value drivers that are based on the ESG-driven competitive advantages or disadvantages, resulting in changes to the target price and recommendation of the company's stock.
4. **Have an active dialogue with the investee company:** However basic it sounds, the analyst or portfolio manager can play a more proactive role, using the knowledge in the first three steps to let the company benefit from feedback, and enable the investor to get a more complete understanding of a company's management and board quality.

The VDA approach goes way beyond metrics: it involves changing behaviour, and is more labour intensive. Analysts tend to be particularly hesitant about taking the third step – quantifying the value of ESG advantages – as they (wrongly) regard the process as subjective. The combined insights from ESG analysis and traditional

fundamental analysis lead to better-informed decisions; indeed, the process itself mirrors the transition to a more sustainable society insofar as it understands the whole, and is then willing to reassess initial findings, before drawing conclusions on the parts.

Exhibit 6: VDA example for KUKA, a German robotics company

For KUKA, a German robotics maker, the four steps were as follows:

1. Identification of material issues For the industry, the analyst identified the following issues as material: innovation management; product stewardship; high-growth market strategy; capital management; and human capital management.
2. Performance on material issues The analyst assessed KUKA's key strengths to be in innovation management, human capital and capital management, while the others are too close to call.
3. Make value driver adjustments The analyst estimated KUKA's growth advantage from innovation management at 2 per cent and its margin advantage at 1 per cent, while also benefiting from a 1 per cent lower cost of capital thanks to strong capital management. The net result of these effects is an increase in target price of 48 per cent from €67 to €99.
4. Active dialogue The analyst had a productive call with the company, but soon afterward the company was taken over.

Value driver	Sales growth	Margins	Cost of capital	Target price
Benchmark (performance excluding ESG advantage)	5-6%	5-6%	10%	€67
Impact from ESG factors	Innovation and high-growth markets: +200bps	Innovation: +100bps	Capital management: -100bps	€32
Total	7-8%	6-7%	9%	€99

Source: Schoenmaker and Schramade (2019)

Appendix 3:

Kate Raworth's Social Foundation and Its Indicators of Shortfall

Dimension	Illustrative indicator (percent of global population unless otherwise stated)	%	Year
Food	Population undernourished	11%	2014-16
Health	Population living in countries with under-five mortality rate exceeding 25 per 1,000 live births	46%	2015
	Population living in countries with life expectancy at birth of less than 70 years	39%	2013
Education	Adult population (aged 15+) who are illiterate	15%	2013
	Children aged 12-15 out of school	17%	2013
Income and work	Population living on less than the international poverty limit of \$3.10 a day	29%	2012
	Proportion of young people (aged 15-24) seeking but not able to find work	13%	2014
Water and sanitation	Population without access to improved drinking water	9%	2015
	Population without access to improved sanitation	32%	2015
Energy	Population lacking access to electricity	17%	2013
	Population lacking access to clean cooking facilities	38%	2013
Networks	Population stating that they are without someone to count on for help in times of trouble	24%	2015
	Population without access to the Internet	57%	2015
Housing	Global urban population living in slum housing in developing countries	24%	2012
Gender equality	Representation gap between women and men in national parliaments	56%	2014
	Worldwide earnings gap between women and men	23%	2009
Social equity	Population living in countries with a Palma ratio of 2 or more (the ratio of the income share of the top 10% of people to that of the bottom 40%)	39%	1995-2012
Political voice	Population living in countries scoring 0.5 or less out of the 1.0 in the Voice and Accountability Index	52%	2013
Peace and justice	Population living in countries scoring 50 or less out of 100 in the Corruption Perceptions Index	85%	2014
	Population living in countries with a homicide rate of 10 or more per 10,000	13%	2008-13

Source: Raworth (2017)

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