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Limitations of conventional private green finance industry and strategies

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Abstract: This chapter aims to describe the investment strategies and models used today for sustainable investing and their limitations. We propose to analyse the strategies under the angle of a theoretical debate engaging the pertinence of the sustainable finance foundations. We describe the assumptions on which sustainable finance strategies are based and we explain their theoretical and epistemological vision. We describe the risk modelling variables, fiduciary duty and ESG data as main limitations for a reformist sustainable finance.

Keywords: green finance; sustainable finance; financialisation; greenwashing; financial materiality; epistemology; financial risk modelling.

1. Green finance: what practices for what objective?

Financial asset management is extending its power and increasing its volumes of assets under management to an unprecedented level (USD 103 trillion at the end of 2020 according to the latest *BCG Global Asset Management* report, i.e., more than the world's GDP estimated by the *International Monetary Fund (IMF)* at just under US\$85 trillion in 2021). The latest report by the *Global Sustainable Investment Alliance (GSIA, 2020)* indicates that one in three assets would be managed in a responsible and sustainable manner (using mainstream strategies as best-in-class/positive screenings, norms-based screening, negative/exclusionary screenings, ESG integration, impact investing, corporate engagement...), making the financial markets the main actor in the ecological and social transformation.

But quantitatively speaking, the amount of green bonds issued represents only 1.1% of the global bond market (approximately US\$128 trillion in 2021). In terms of rhetoric, and in his usual letter to shareholders, Larry Fink, CEO of *Blackrock* (the world's largest asset manager), highlights the climate and carbon objective as the headline or even the "raison d'être" of the strategy, without explaining that Blackrock has only supported three resolutions to combat global warming out of 36 at the general meetings (and has opposed, according to *The Guardian* (2020), for 82% of climate-related shareholder motions at fossil fuel companies between 2015 and 2019). In 2019, the world's top three asset managers (*Blackrock, Vanguard & State Street*) oversee \$300bn fossil fuel investments (*The Guardian*, 2019). In the meantime, Tariq Fancy (2021), *Blackrock's* former "sustainable guarantor", has denounced the greenwashing practices of his former employer, and the *DWS* scandal (condemned by the *Securities Exchange Commission (SEC)* for having lied about the degree of sustainability of its funds in its clients' communication) reminds us that "green communication" is now part and parcel of market players (Grandjean and Lefournier, 2021).

Recent European regulation (taxonomy, sustainable finance disclosure regulation SFDR) develops to propose a more binding reporting and investment framework with sustainability, and to drive market-based investments towards ‘green industries’. But according to the *Carbon Disclosure Project* (CDP, 2021), only 158 funds out of 16,500 studied, representing barely 0.5% of assets under management, are in line with the objectives of the 2015 Paris agreements. Amenc et al (2021) demonstrate that climate portfolio strategies do not fulfil the objectives and promises they communicate, since the climate performance of companies only accounts for a maximum of 12% of the investment decisions of the funds studied and displaying a green label, while a third of the companies whose environmental performance deteriorates over the period 2011-2020 see their weighting increase in the portfolios analysed. More recently, Morningstar (2022) states that more than 4 trillion of assets under management are stamped by managers as either SFDR “Article 8” (i.e., “considering environmental and social considerations”) or SFDR “Article 9” (i.e., “pursuing an environmental or social objective”). But the data provider also indicates that a quarter of SFDR Article 8 funds do not meet ESG criteria, and that the number of Article 8 and Article 9 funds in their sample that reported their minimum sustainable investment exposure as defined under the EU Taxonomy-aligned is too weak. According to Morningstar (2022: 35), the number of Article 8 and Article 9 funds in their sample that reported their minimum sustainable investment exposure as defined under the EU Taxonomy-aligned is small (27%). The report adds that “unsurprisingly, 0%-values account for the overwhelming majority of the responses received (90%), while 8% reported minimum taxonomy-aligned sustainable investments of between 0% and 10%. Very few funds, only 2%, target exposure higher than 10% and none are higher than 60%.”. In the same line, a recent insight provided by the data provider FE Fundinfo (2022) highlights that “over 1,500 Article 9 funds at risk of losing their status”. According to the study, “of the 6,000 Article 9 funds/share classes, 79 have 100% as the minimum investment in sustainable investments”. All those figures clearly reopen

the debate on greenwashing and especially on the real impact of identified sustainable/green funds and are really far from the recommendations of the *High-Level Expert Group on Sustainable Finance* (HLEG) appointed by the *European Commission*, which stated that “achieving our Paris Agreement objectives requires nothing less than a transformation of the entire financial system, its culture and incentives” (HLEG, 2018: 2).

Sustainable and green investment has apparently changed, particularly through the democratisation of ESG criteria, from a normative attempt to promote ethical investment to a speculative evaluation practice (Revelli, 2017), considered as a new investment opportunity embedded in a market logic (Leins, 2020). To make these strategies visible and to better sell them, in a logic of profit, the most common weapon remains that of greenwashing (Shrivastava, 1994; Lyon and Maxwell, 2011; Marquis et al., 2016), linked to the incessant nature of the commodification process deployed in financial markets (Habermas, 1990). Even if the regulation framework could have influence on the practices of financial actors, no major changes will occur if the investor behaviour doesn't change radically. Sustainability is not a question of quantification, reporting, tools, or engineering. It is a strict psychological issue, that will be realised only in a culture of passion and conviction (Shrivastava, 2010). Today, in parallel with the predicted ‘tragedy of horizons’ (Carney, 2015), green finance industry could also argue to be positioned in a neoliberal green finance typology (Jäger & Schmidt, 2020; Dwizok & Jäger, 2021), where sustainability acts as a determinant of financial duty and materiality (Scholtens, 2006; Banerjee; 2008). The investor behaviour is clearly at stake, as the financial duty engages financial actors to consider the profitability/risk ratio as the *alpha* and the *omega* of all investments.

This chapter has thus the objective to identify the limitations of conventional private green finance industry and strategies. We will identify what are the epistemological roots and codes of languages of green finance, and what could be some consequences of this epistemological

positioning in the modelling, methodologies, and practices, that finally makes green finance a financial and material objective.

2. Limitations of private green finance strategies

2.1. Epistemological perspectives: changing the probabilistic toolbox

The aim of this section is to explain that sustainable finance using the toolbox of neoliberal finance will be difficult to achieve. There is a fundamental conflict between green finance purposes and neoliberal risk modelling. The toolbox of neoliberal finance for risk modelling contains – among others – probabilistic assumptions of price dynamics, shaping a “morphology of randomness”. It is argued elsewhere that the main problem with neoliberal finance risk modelling mainstreamed by regulation and incentives is its underlying morphology of randomness (Walter, 2020). This morphology is based on the Brownian representation of uncertainty, a mathematical framework invalidated by all statistical tests and whose preservation as the theoretical background of neoliberal finance represents an “epistemological puzzle” (Walter, 2019). This morphology creates a short-term oriented risk culture because of the embeddedness of a short-term horizon in the morphology of randomness.

For this reason, the intellectual background of neoliberal finance for risk modelling is based on the Leibniz’s principle of continuity (Walter, 2020). It is argued that Leibniz's continuity principle pervades prudential regulation and underpins a culture of risk in finance as a shared mental model acting as a mental disposition for practitioners, academics, and regulators, hindering the long-term 'green' view for finance experts and practitioners. In a nutshell, we introduce a relation between the notion of sustainability and the morphology of randomness. Sustainable finance embedded in Leibniz’s principle of continuity will be difficult to achieve.

We have seen that “achieving our Paris Agreement objectives requires nothing less than a transformation of the entire financial system, its culture and incentives” (HLEG, 2018: 2). We

reformulate the previous statement by presenting a new hypothesis for culture change as following. Any green finance project devised to fit the Sustainable Development Goals (SDGs) needs a paradigm shift in the morphology of randomness underlying financial risk modelling. This can be achieved by integrating the characteristics of “nature” and sustainability into the modelling carried out.

As noticed by Ippoliti (2017: 121) “rules, laws, institutions, regulators, the behaviour and the psychology of traders and investors are the key elements to the understanding of finance, and stock markets in particular”. In this vein, the short-termism can be thought as the result of human actions and financial rules and institutions mentally shaped with the principle of continuity. How does the continuity principle come into effect in the framework of financial modelling? In the next section, we elaborate on this topic.

2.2. Neoliberal risk modelling and the principle of continuity

Stochastic processes are an important component in contemporary financial modelling of the market dynamics of asset prices. The most used continuous-time stochastic process in neoliberal finance was the Brownian motion.

In the Brownian framework, the variance is a linear function of the length of the time. This equivalency between risk and time has the effect of making time (or risk) “disappear” in a deterministic perspective. Risk can be eliminated by the passage of time, or time can be compressed into instantaneous risk. This interchangeability creates a mental disposition that does not include the time span in investment perspectives. Hence, the principle of continuity is creating a time-risk equivalency.

The principle of continuity permeated all neoliberal economic models, which was the source of neoliberal finance theory. With a mental representation built on continuity, financial risk logically disappears since if things change gradually and steadily, their development is always

predictable and safeguards can be found in techniques of financial derivatives, which are all based on the principle of continuity.

2.3. The quantification conventions and the fair market value

It has been shown that three financial “quantification conventions” have organized the financial thought (Chiapello and Walter, 2016). The principle of continuity is the background of the third quantification convention via the Girsanov’s theorem. The global framework of neoliberal finance is built on this third quantification which leads to the Absence of Opportunity of Arbitrage (AOA). Based on the pioneering mathematical results of Harrison and Kreps (1979) and Harrison and Pliska (1981) under the AOA assumption, mathematical finance has come to consider it possible to extract expected returns on investments from market prices. In these conditions, market prices are considered the perfect measure of discounted expected cash flows and can be used to “reveal” an underlying risk-neutral probability, unique for all tradable securities (Walter, 2022). All these continuity-based techniques (Girsanov’s theorem) lead to the “dogma of efficiency”. We now turn to this dogma.

2.4. The dogma of efficiency and the law of one price

The market efficiency hypothesis (Fama, 1970) assumes that the securities’ prices integrate and reflect all available information (whether public or private) on the underlying risks affecting these same securities. In this respect, efficiency would validate the fact that a price is fair and that it integrates all the information on supply, demand, scarcity, macroeconomic, microeconomic or geopolitical influences. The investor thus searches for the best adjusted price, which integrates all the available information into risks at time t . The price would thus be that of the previous period to which must be added the expected return for the coming period integrating the new information. The market would be responsible, through supply and demand,

for defining this fair price, and would make it possible to avoid speculative bubbles and stock market crashes. Behavioural finance has since largely contradicted this, either through the prospect theory via the over- or under-reactions of agents (Kahneman and Tversky, 1979; DeBondt and Thaler, 1985) or through its ability to follow feedback models (Daniel et al, 1998; Shiller, 2003), via different framing biases, cognitive, emotional, or collective.

Efficiency therefore requires that all extra-financial information from externalities (climatic, environmental, social, etc.) be integrated and digested in the form of risks in order to adjust the price continuously. The price thus becomes the only signal and judge of value in the efficiency model, which is well established in financial theory, market practices and the market economy. Polanyi (2001) explains that the market economy presupposes a self-regulating system of markets, that is, an economy governed by market prices and by them alone. Thus, the price signal, tangible, concrete and precise, would be the only indicator that governs and gives rhythm to exchanges and economies, in a self-regulating prophecy because it is capable of organising the totality of economic life without external help or intervention (Polanyi, 2001).

Thus, prices are scrutinised by investors to define what is cheap and what is not, regardless of positive or negative externalities. Financing sustainability and ecological reconstruction requires that natural capital becomes measurable and that we can predict when a climate event will occur in order to assess its consequences on the prices and returns of investors' portfolios, which must tend towards the efficiency frontier. The price would therefore be the only efficient signal, perceived as the finality, with externalities acting as an adjustment variable.

However, to understand how prices are formed in the sectors affected by global warming, it is necessary to analyse all the determinants of these prices. For example, it is easy to observe that the price signal of the fossil fuel energy sector does not reflect the reality of supply and demand and efficient information, as it is boosted by liquidity obtained through public subsidies (Mundaca, 2017), and thus become, by implication, cheaper than the renewable energies sector.

According to Parry et al. (2021: 9), “underpricing of fossil fuels is still pervasive across countries and is often substantial. At the global level, 99, 52, 47, and 18 percent of coal, (road) diesel, natural gas, and gasoline consumption is priced at below half of its efficient level in 2020, respectively.” The authors add that implementing effective pricing by removing government subsidies to the fossil fuel sector in 2025 would reduce CO2 emissions by 36% below baseline levels, which is consistent with keeping global warming to 1.5 degrees, while increasing revenues to a value equivalent to 3.8% of global GDP and preventing 900,000 local air pollution deaths per year.

2.5. Fiduciary duty and risk/return maximisation

The fiduciary duty that governs the financial industry, and more specifically asset management, is to manage financial wealth for the sole financial benefit of savers and shareholders (McWilliams, 2014), which the agency theory (Jensen and Meckling, 1976) and the neoclassical view define as maximising shareholder value (Jensen, 2001). In other words, the objective of the asset manager, who is entrusted with a management mission, is to protect the capital transferred, to return it and thus to be fully anchored in a financial complexity (Viederman, 2003) that will allow him to maintain his fixed risk/return objectives. The fiduciary question is above all a question of trust and is translated, depending on the jurisdiction, into a position of prudence (Richardson, 2013), translated almost exclusively into financial terms, mainly risk control and transparency via a growing body of information (Viederman, 2003). In the face of this fiduciary law barrier (Richardson, 2013), sustainability is struggling to find its way into the accountability objectives of pension funds, retirement funds or asset managers. Bearing additional risks related to sustainable activity and potentially generating additional costs for the saver could cause the financial manager to deviate from his fiduciary path and legal obligation, that is to manage profitability/risk ratio. The decision to invest will be made if

and only if the discounted adjusted sustainable cash flow is deemed sufficient by the shareholder, regardless of the ecosystem nature of the project. The financial legal anchoring suggests that the ultimate objective will always remain the maximisation of the investor's risk/return trade-off, *de facto* relegating sustainability to the background and reducing it to a risk adjustment value (Revelli, 2016, 2017). Asset managers are remunerated according to their ability to attract new clients on their capacity to generate *alpha*, allowing themselves to be simply a good communicator on their sustainable processes, without real "hard law" constraints.

2.6. ESG data, sustainable indices, and labels: the duty of financial materiality

The ESG data market is now concentrated around a few majors following a successive wave of mergers and acquisitions over the last ten years (Escrig-Olmedo et al., 2019). Most of these ESG rating agencies are owned by financial data providers or financial rating agencies¹, with a desire to provide a combined offering of financial and ESG data. The increased market competition between these providers, between demarcation and differentiation in the offer, generates disagreements and rating divergences (Hedesström et al., 2011; Berg et al., 2020; Christensen et al., 2021; Gibson et al., 2021) related to different methodologies or observed dimensions. ESG rating would thus be a matter of means, a market for large listed companies benefiting from substantial financial resources (Drempetic et al., 2020) to formalise adequate reporting aligned with investors' objectives (Kotsantonis and Serafeim, 2019; Drempetic et al., 2020). This tendency to focus on investors' expectations would result in the content of companies' practices being omitted in favour of the meaningful indicators sought by investors (Slager and Gond, 2020). According to the authors, companies would be responding to *cherry-picking* demands set by the rating agencies. They would thus provide index or ESG data providers with limited data rather than spend additional resources to collect more refined data. Providing ESG data that is aligned with the objectives of the raters would therefore be

considered a “necessary evil” by companies (Slager and Gond, 2020: 15), between the difficulty of gathering, collecting and meeting demand, but also the desire to attract new sustainability-sensitive investors. Thus, the CSR agenda would be defined according to the ratings given by the agencies, in a logic of “microstatactivism” (Slager and Gond, 2020: 12-13), and not according to the expectations of stakeholders.

The explosion of green or sustainable indices and labels also encourages competition between market players and companies to be referenced and therefore visible to investors (Crifo et al., 2020). In Europe, the list of labels² continues to grow, all incorporating different assessment methodologies, and with a view to competition and the imposition of standards (Novethic, 2019). The proliferation of initiatives aiming at attracting financial investors and individual savers by giving them more visibility on green products, paradoxically results in a lack of clarity that does not allow investors to take hold of these products. Finally, “the informational attributes highlighted by the labels reflect the point of view of management companies more than that of individual investors” (Arjaliès et al., 2013: 93). The capacity of this labelling strategy to provide an adequately targeted financing at the scale and speed required by the SDGs can also be questioned. As Lagoarde-Segot (2019) points out, the aggregate response of individual agents to the introduction of ‘soft’ incentives and labels is largely unpredictable given the complexity of the financial system, the variability of macroeconomic dynamics, and the changing investment opportunities for banks and financial operators.

The market’s reflex would therefore be to make ESG data and benchmarks commensurable and convert them into resources or signals, to support its investment narrative (Leins, 2020), or using sustainability and ESG principles as a determinant of the financial system *stricto sensu*, in a strict material objective (Scholtens, 2006). The development of green or sustainable finance thus contributes to the growth of a financial hyper-reality (Schinckus, 2008) operating in a lexical jungle of labels and data, and subject to contradictory injunctions. The asset managers

progressively lose their ability to distinguish reality (the evolution of the Earth system and the impact of his investment on it) from the imaginary (the various signals produced by the market), and start to engage in the imaginary without understanding what they are doing.

3. Conclusion

This chapter tried to, first, delimitate the current trend of sustainable finance and its strategies, throughout the new regulation that frames initiatives from practitioners. Second, it layed the foundations of its limitations through the epistemological perspectives that question the financial models and tools used for sustainable finance. Green finance is part of the financial industry, and uses the same language, tools, actors and codes. It is embedded in a financial rhetoric and a quantification process, that is visible in the risk modelling used but also in the data, labels, and all others specific tools developed in this industry. In its 2018 report, the HLEG asked o how regulation “could be adapted to further facilitate long-term investments while maintaining a strong risk-based nature” (HLEG, 2018: 72). The present chapter answered this by concluding that sustainable finance in the toolbox of neoliberal finance will be difficult to achieve. Green finance has become financialised and the financial footprint is visible in the way ESG data are used by investors in the way labels and benchmarks are constructed. Financial materiality is everywhere, from the roots to the tools, but the question that must be raised now is: “can we achieve ecological and social goals without a profound transformation of the financial system?”, or in other words, “can we envisage sustainable buds in financialised roots?”.

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Endnotes

¹ MSCI bought *Riskmetrics* in 2010, which in turn had bought *Innovest* and *KLD*, the historic ESG rating agencies. In 2016, *S&P Global* bought *Trucost*, the benchmark in carbon footprint measurement. *Moody's* bought the French-English group *Vigeo-Eiris* in 2018, *London Stock Exchange* the French *Beyond Ratings* in 2019, *Morningstar* the Dutch *Sustainalytics* in 2020, and *Deutsche Börse Group* bought the American *ISS* in 2020. Data providers *Bloomberg* and *Refinitiv* (via the acquisition of *Asset 4* since 2009) also offer ESG data in addition to their financial data offerings. *Refinitiv* was also acquired by *London Stock Exchange* in 2020.

² Novethic (2019) identifies 7 different official labels in Europe, carried by market associations, governments, or independent institutions: SRI label (France), Greenfin label (France), FNG-Siegel (Germany, Austria, Switzerland), LuxFlag (Luxembourg), Towards Sustainability (Belgium), Umweltzeichen (Austria), Nordic Swan Ecolabel (Nordic countries).