Routledge International Studies in Money and Banking

FINANCE AND SUSTAINABLE DEVELOPMENT

DESIGNING SUSTAINABLE FINANCIAL SYSTEMS

Edited by
Magdalena Ziolo

Finance and Sustainable Development

There are many studies confirming the relationship between financial systems and economic development, but there are few which examine the degree to which financial systems a) impact the quality of information, b) influence sound corporate governance, c) ensure effective mechanisms of risk management, d) mobilize savings and e) facilitate trade. In the context of sustainability, there should also be a line of inquiry into how a particular financial system influences the assurance and implementation of sustainable development principles and goals.

This book delivers a methodological approach to designing and assessing sustainable financial systems. It provides an original contribution by prioritizing ESG factors in the decision-making process of financial institutions and identifying their impact on sustainable financial systems. The author argues that to achieve financial stability, it is necessary to have in place mechanisms designed to prevent financial problems from becoming systemic and/or threatening the stability of the financial and economic system, while maintaining (or not undermining) the economy's ability to sustain growth and perform its other functions.

The book primarily takes a simulation and experimental approach. It is the first book to take such a comprehensive look at sustainable financial systems as opposed to sustainable finance in general. It will appeal to academics, students and researchers in the fields of economics, finance and banking, business, management and political and social sciences.

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Finance and Sustainable Development

Designing Sustainable Financial Systems

Edited by Magdalena Ziolo

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Chapter 1

Introduction

Magdalena Ziolo

Financial systems have been considered so far based on the economic context, inter alia, whether they ensure the safety and stability of the functioning of financial institutions, whether they protect depositors and clients against unfair practices, or whether they adequately secure micro and macro prudential risks. In these aspects, assessment and measurement of the operation of financial systems is carried out with links between institutions and their resilience to shock through stress tests. The 2008 crisis has shown that such an approach does not guarantee a comprehensive approach to risk management because the environmental and social risk is neglected. Finances today have a wider role than those defined in the 1950s aimed at meeting the needs of shareholders. Today's finance addresses primarily social needs and supports solving environmental problems. It is therefore possible to move away from the shareholders' perspective only to the stakeholders'. The perception of the context of values also changes if the finances are to build sustainable value for stakeholders. This forces a new approach and thinking about finances and financial systems that should be designed and monitored for sustainability and not just for stability. Therefore, financial institutions, regulations, and the entire architecture of financial systems must be reconstructed in terms of considering the decisions and strategic documents of key social and environmental risks such as climate change, social exclusion, hunger, poverty, and income disparities. Sustainable financial systems, financial institutions that contain solutions that support decisions and development of financial products and investments that achieve social and environmental goals, and the criterion of profit are not the only deciding factors on the operation of financial institutions.

A literature review provides information on how the financial system can facilitate decision-making on the trade-offs between economic, social, and environmental goals of sustainable development. Analysis of definitions regarding the concept of financial stability indicates the development of this concept under the influence of the global financial crisis. The new paradigm indicates the need to consider risk factors, and in particular in the new paradigm, environmental, social, and governance (ESG) factors take a special

place. Moreover, the evolution highlights broadening this conception to a value to society as a stakeholder triple line: people, planet, profit. To achieve financial stability, it is necessary to have in place mechanisms designed to prevent financial problems from becoming systemic and/or threatening the stability of the financial and economic system, while maintaining (or not undermining) the economy's ability to sustain growth and perform its other important functions.

There are many studies confirming the relationship between the financial systems and economic development, but there are few studies examining the degree to which financial systems a) impact the quality of information, b) influence sound corporate governance, c) ensure an effective mechanism of risk management, d) mobilize savings, and f) facilitate trade. In the context of sustainability, one should also add an inquiry on how the financial system influences the assurance and implementation of sustainable development principles.

With the development of sustainable finance we can observe the increasing role of sustainable financial systems and discuss how to design them to achieve better results in financing sustainable development. The UN Principles of the Responsible Investment (PRI) Initiative define a sustainable financial system as a resilient system that contributes to the needs of society by supporting sustainable and equitable economies, while protecting the natural environment. We can observe nowadays that the governments in many countries have taken substantial steps to develop and promote green finance as a crucial part of environmental finance. Therefore the World Bank emphasizes that the Asia-Pacific region is one of the most active in innovations towards a sustainable financial system. The growing number of studies indicates expectations regarding the improvement of social and environmental results over time in the valuation of the company on their markets. This evidence, and the fact that we observe a systematic increase in the costs of social and environmental damage as a result of negative externalities, indicates the need for a strong custody to create sustainable value.

The aim of the book is to deliver a methodological approach for designing and assessing sustainable financial systems. The original contribution and approach presented in this book proposal consist of prioritizing ESG factors, taking into account in decision-making process of financial institutions and identifying their impact on sustainable financial systems and proposing a new approach to assessing and comparing financial systems with a clear division into sustainable and unsustainable financial systems.

The book covers the research gap concerning sustainable finance and sustainable financial systems. A summary precedes each chapter in the book, which is followed by a conclusion. **Chapter 2** aims to draw attention to the significant gap in the existing literature regarding sustainable development (SD) issues. From the perspective of finance, the approaches seem unsatisfactory, with unanswered questions. The rank issues, its strategic dimension,

the amount of financial resources allocated to focus on SD, and the identification of the financial phenomena that fall into this category are priorities. The chapter addresses various research questions related to the inclusion of SD's multidimensional, holistic, and long-term perspectives in finance or the necessary changes in the academic curriculum aligned with the concept of sustainable finance that can lead to an increase in the efficiency of SD funding. **Chapter 3** aims to clarify the relationship between different areas that form the overall system of sustainable funding, including the main components of ESG risk. The financial sector is particularly predisposed to EGS risk exposure, which is an increasingly important element considered in the credit risk management process. Therefore, sustainable finance decisions are those that incorporate ESG risk into the decision-making process. Fuzzy cognitive maps were used to identify factors of the greatest importance for sustainable financial systems and to study the relationships between them. **Chapter 4** centers around the topic of sustainable, socially responsible, or green banking, which is addressed from two perspectives, namely the micro level and macro level. The micro-level dimension of the analytical research aims at emphasizing the peculiarities of this business model and the specific sustainable financial products and services developed by the banks in order to diagnose the role played by sustainable banking in the implementation of environmental and social issues. Furthermore, it is comprehensively reviewed the international frameworks, guidelines, and principles for responsible banking activity, issued by various organizations, with the fundamental purpose of assisting banks in screening and financing socially and environmentally sustainable economic activities. To reveal the spread of socially responsible or sustainable banks across European countries, a map has been created for each main international sustainability framework/standard/principle to visually illustrate those European countries' banking systems witnessing the broadest commitment for sustainable financial behavior. **Chapter 5** provides original knowledge about ways the financial institutions monitor and respond to market needs in terms of adapting the financial products and services offered to respond to the needs of market demand. This includes the role of such instruments as customer segmentation and the design of sustainable value in business models and designating sustainable financial products. Changes in the area of sustainable financial instruments are a consequence of changes in the areas of the markets they concern. **Chapter 6** presents challenges and problems that the insurance sector must face in the context of the emergence of new challenges created mainly, but not only, by environmental risk. Environmental, social, and governance issues should be introduced to the insurance business. Therefore, UN environment and insurance supervisors launched the Sustainable Insurance Forum (SIF) in 2016. This is intended to create a global network of insurance supervisors and regulators working together in the area of sustainable insurance. **Chapter 7** aims to discuss the role played by the capital market in

promoting sustainable development. The capital market proves to be a very flexible tool that can meet evolving economic, social, and environmental needs. Even though it has been shown that society as a whole has not fully internalized the need for socially responsible behavior, the capital market has done so because it is understood that SD presents exciting opportunities. The adjustment of the capital market to the sustainability paradigm has not stopped at conceptual strategies or approaches, but has led to the creation of new environmental asset classes and innovative funding solutions such as green bonds. In this context, the capital market has become a leading promoter of the structural reform of traditional businesses from carbon-intensive to climate-friendly projects. **Chapter 8** presents the alternative finance market size and structure. Then the definition and the essence of crowdfunding phenomenon are presented. The authors conducted research and confirmed the hypothesis that crowdfunding is an innovation. The last part of the chapter verifies the compliance of the crowdfunding assumptions with the concept of sustainable finance from a microeconomic and macroeconomic perspective. The chapter also contains the Boston Consulting Group (BCG)-type taxonomy matrix for crowdfunding projects and classification of crowdfunding models by financial risk and the value of the raised funds. **Chapter 9** seeks to answer the questions related to sustainability rating agencies. Furthermore, it analyses closer the methodologies employed by these 'agencies' to decipher whether they can truly fulfil the requirement of the mainstream body of investors looking to invest their resources with those who value and promote sustainability in their practices. If they cannot, then who may be able to fulfil that role? What impact may the requirements of the mainstream investing body have upon deciding the trajectory of this Sustainable Rating Industry? **Chapter 10** discusses the role of state and public finances in taking actions to support the implementation of Sustainable Development Goals (SDGs). Therefore, strategies and government policies need to systemically change consumption and production patterns, encourage the preservation of natural endowments, and reduce inequality. The issue focuses on enhancing sustainable financing strategies and investments at both regional and country levels. Thus, environmental taxation will be presented as an instrument to influence and shape the attitudes of companies and households regarding sustainable development, particularly the role of taxes in reducing greenhouse gas emissions and removing inefficient fossil fuel subsidies. In addition, the role of public expenditure in financing investments and technologies conducive to environmental protection and social inclusion will be discussed. **Chapter 11** is designed to conceptually understand the various typologies of sustainable investing and its role in accomplishing the goals of SD. It attempts to explain the drivers, trends, and various evaluation techniques used by investors to conduct research in responsible investing, instruments based on this ideology, and finally the barriers which deter its spread. The chapter emphasizes the

modified measures of socially responsible investing (SRI) and responsible investing (RI) assessment methods, as well as project-related risks and the methodology of its evaluation. The innovative financial instruments which are based on sustainable investing and capture a significant market size in the form of listed equity, bonds, hedge funds, and private equity are explicitly illustrated in this chapter. **Chapter 12** presents theoretical aspects referring to the financial system, financial stability, and sustainability. The chapter identifies ESG risk that matters for sustainable financial systems, defines and provides a methodological approach for sustainable financial systems, and provides recommendations for designing a sustainable financial system. **Chapter 13** outlines the various existing SDG control and monitoring mechanisms in India and emphasizes the need for external auditing of sustainability reports which are at present conducted in an arbitrary manner. The findings from this chapter are expected to benefit policy makers, regulators, academicians, and companies. **Chapter 14** presents the scope and manner of the presentation of the sustainable issues in non-financial statements. The objectives of this chapter are as follows: first, and overview of the non-financial reporting, then its historical development will be presented. Finally, this chapter provides an overview of the new trends and challenges of non-financial reporting.

The targeted participants of the book are the leading representatives of academia, practitioners, executives, officials, and graduate students in economics, finance, management, statistics, law, political sciences, etc. Much emphasis is put on academic issues within the field of financial stability, sustainable finance, and SD.

Chapter 2

Sustainable finance

A new finance paradigm

Andreea Stoian and Filip Iorgulescu

Introduction

Scientists, scholars, economists, humanists, industrialists and civil servants from around the world have expressed concerns about the problems facing society as a whole, the disruptions caused by poverty, environmental degradation, lack of trust in institutions, uncontrolled growth of urbanization and job insecurity that are characterized by common technical, economic, social and political elements and which interact with each other. Five decades ago, they warned that if demographic trends, industrialization and pollution, food production and the depletion of natural resources remain unchanged, the limits of growth will be reached in the next hundred years (Meadows et *al*., 1972). Daly and Farley (2011) further explained this outcome by pointing out that the current economic paradigm is based on the idea of infinite growth, and given that we live in a world with finite resources, this will inevitably prove to be an impossible goal. While capital market economies can sustain the quest for infinite growth a bit longer due to their superior efficiency in comparison to centralized economies, this is only going to delay the eventual collapse of this paradigm. As a consequence, Meadows and colleagues (1972) suggested that we can create a long-term sustainable society if we curb growth and production of material goods in order to achieve a state of global equilibrium between human population and economic activity.

The scientific interest and concerns in the field of sustainable development (SD) have made significant progress in recent years. We are witnessing a growing body of research that brings empirical evidence on how economic agents have recognized, accepted and internalized this paradigm. However, despite this progress, many studies have shown that there are still gaps in the conceptual substantiation and question whether this concept has been understood correctly. The financial market can play an important role in the transition from the traditional paradigm of economic growth to the SD paradigm through its core function of efficient allocation of the financial resources to the most productive investments. However, from the perspective

of finance, the approaches seem unsatisfactory, with unanswered questions. Therefore, through this chapter we aim, on one hand, to draw attention to the significant gap in the existing literature regarding SD issues and briefly present the developments that have emerged in the discourse on SD. We consider this approach important because the ambiguities regarding the conceptual substantiation can generate further ambiguities regarding the implementation of the SD paradigm and the way in which the economic and financial mechanisms will adapt to it. On the other hand, we discuss at a theoretical level the transition from the traditional approach to finance to a more holistic one described by the new emerging paradigm of sustainable finance (SF) and how it can contribute to the achievement of the Sustainable Development Goals (SDGs) recently established by the 2030 Agenda for Sustainable Development.

Theoretical approaches to sustainable development

Faced with growing evidence concerning the shortcomings of the existing economic paradigm, the United Nations Conference on the Human Environment in 1972 issued a declaration containing 26 principles on the environment and development known as the Stockholm Declaration (UN, 1973). Among the principles on which the participants agreed were the following: safeguarding natural resources and wildlife; preservation of earth's ability to produce renewable resources; non-renewable resources must be shared and not depleted; pollution must not exceed the natural ability of the environment to clean itself. Ten years after the conference, it has been found that a number of global environmental problems have not been adequately addressed and that the challenges have grown. Therefore, in 1983 it was decided to establish the World Commission on Environment and Development (WCED) known as the Brundtland Commission whose purpose was to create a united international community to promote common sustainable goals, to identify sustainability issues and to formulate solutions and implement them. The 1987 Brundtland Commission report introduced the term *sustainable development* for the first time and defined it as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). Since then, the definition and the concept itself have been the subject of numerous debates and criticism, and the scholars and researchers have not agreed on a more comprehensive approach and have not yet bridged this gap, leaving questions still unanswered. In the following, we will briefly present some of the criticisms that reveal the main weaknesses identified in the theoretical substantiation of this paradigm.

Shortly after the introduction of the SD definition, Lélé (1991) identified a lack of consistency in its interpretation and showed significant weaknesses

in its formulation pointing to an incomplete perception of poverty and environmental degradation and confusion about the role of economic growth. The author expressed concerns that SD was becoming a fashionable concept that no one cares to define. He also pointed out that there were voices who advocated that this concept should not be defined too rigorously, which would have allowed those with irreconcilable positions not to compromise themselves. However, he supported the idea of revealing new understandings of the relationship between social and environmental phenomena and the most rigorous characterization of the concept in order to be neither misinterpreted nor distorted. He explained literally the meaning of SD as the development that can be continued indefinitely or for an implicit period, while 'development' refers to a process of directed changes. He also pointed out that because there is no clear distinction between objectives and means, SD has often been interpreted as a process of change that can be continued forever.

A decade after Lélé's paper, Banerjee (2003) once again drew attention to the weaknesses of the SD approaches. He stressed that this term was introduced in order to address the environmental issues generated by economic growth, but expressed concern about the ambiguity regarding what is sustainable (economic growth, the environment or both), showing that precisely these ambiguities are the subject of debate. Banerjee supported the idea that this concept aims to describe largely the process of economic growth achieved without destroying the environment and that instead of being a major discovery, it is subordinated to the economic paradigm. He stated that, in fact, the term 'development' is nothing more but a new name for 'economic growth', which thus acquires a much greater relevance and importance. Banerjee believed that corporations play a significant role in SD, but the question is whether current environmental practices are compatible with this concept. He also drew attention to the fact that greening the industry is not the same as SD and that although progress has been made in controlling pollution and emissions, it does not mean that these ways of development are sustainable for the planet.

Hopwood et *al*. (2005) thought that all the supporters of the new paradigm agreed on the need to change society, but that they have not yet concluded and are still debating what tools are required and what actors should be involved in this process, as still there is no unitary view. They showed that there is an even greater confusion because people tend to use the same word to designate a variety of divergent goals and views that involve different methods or paths of achieving SD and identified three approaches of the SD problem. The status quo approach supporters recognize the need for change, but they do not consider that society or the environment is facing insurmountable difficulties and believe that adjustments can be made without fundamentally changing society. According to their view, the solution

to SD is economic growth. They warmly welcome the reduced role of governments manifested by decreasing progressive taxation, social protection, increasing privatization and minimizing regulations, considering that the business environment is the determinant of sustainability. The reform approach accepts the existence of imperative problems, criticizing public policies and business administration, but it does not foresee the collapse of the ecological or social system nor the necessity of some fundamental changes. Proponents of this approach believe that the source of these problems is the imbalance between knowledge and information and accept that at some point profound changes in policy and lifestyle will be needed to address the challenges posed by these problems. They focus on technology, science, information, market change and government reform. The reform approach supporters recognize the key role that governments play in moving towards SD. The business sector also plays its role by putting pressure on and controlling government decisions on taxation and subsidy, while focusing on research and information. The transformation approach supporters view the societal and environmental problems as generated by the fundamental features that characterize society and the human relation and interaction with the environment. They consider that reform is not enough and argue that in fact the problems are endogenous to the economy and the current organization of society that has as its primary goal neither the well-being nor the sustainability of the environment. Unlike the supporters of the status quo approach who think the changes should be made at the level of the top-down management of the existing decision-making structures, the transformation approach proponents see the change through political action within and outside the existing structures.

SD operationalization and its progress

Based on decades of work, in 2015, all the United Nations member states adopted the 2030 Agenda for Sustainable Development that provides a plan for ensuring peace and prosperity for people and the planet (UN, 2015). The agenda has at its core 17 broad SDGs that call all countries to action in a global partnership, regardless of their level of development and which should be achieved within the next several years. All SDGs are deeply interconnected, but according to Rockström and Sukhdev (2016), they can be delimited into societal, economic and environmental goals as follows:

- *Societal goals*:
    - Eradicating poverty everywhere and in all its forms
    - Eradicating hunger, ensuring food security, improving nutrition and promoting sustainable agriculture

    - Ensuring a healthy life and promoting well-being at all ages
    - Ensuring an inclusive and equitable quality education and promoting lifelong learning
    - Ensuring gender equality and better promotion of females
    - Ensuring access to modern forms of affordable, reliable and sustainable energy
    - Inclusive, safe, flexible and sustainable development of cities and human settlements
    - Promoting inclusive and peaceful societies, ensuring access to justice for all and building a responsible, efficient and inclusive institutional infrastructure
- *Economic goals*:
    - Promoting sustainable and inclusive economic growth, full and productive employment, ensuring decent work for all
    - Building a flexible infrastructure, promoting inclusive and sustainable industrialization, stimulating innovation
    - Reducing inequality within and between countries
    - Ensuring sustainable production and consumption patterns
- *Environmental goals*:
    - Ensuring access to clean water and sanitation networks
    - Taking urgent actions to combat climate change and its consequences
    - Conservation and sustainable use of oceans, seas and marine resources for sustainable development
    - Protection, restoration and sustainable use of terrestrial ecosystems; sustainable forest management; combating desertification and reducing soil degradation
- *Overall goal*:
    - Strengthening the means of implementation and revitalizing the global partnership in terms of sustainable development

The approach of Rockström and Sukhdev (2016) emphasizes that SDGs must not be pursued independently because the current problems of the world are systemic and deeply interconnected. Thus, the concept of SD is a holistic one in which economy should serve the higher purpose of societal development while respecting the environmental boundaries of our planet. In this view, Norström et *al*. (2014) recommended that three key elements be considered for establishing effective SDGs: the necessity of an integrated and systemic socio-ecological perspective; the necessity to make a compromise between the scale of the objectives and the possibility of reaching them; and finally, since the implementation of the SDGs may prove

significantly disruptive in comparison to the current paradigm, it should take into account existing knowledge about social change processes both at individual and global levels.

Although the progress made in achieving the objectives has been observed since the adoption of the agenda up to now, the estimates from 2019 show that for many of the SDGs, the 2030 targets will not be reached (UN, 2019). For example, even if the level of extreme poverty is constantly declining, it will not reach a degree of less than 3% of the total population exposed to this risk by 2030. Efforts to eradicate hunger and malnutrition, although they have made significant progress in recent decades, show that the number of people exposed to this risk is growing again. In the field of health and well-being in order to meet the objectives set, efforts must accelerate. To ensure quality education, actions need to refocus on improving the outcomes of lifelong learning, especially among women, girls and marginalized people. Numerous issues have been identified in ensuring gender equality that could undermine the achievement of this goal by 2030. Despite progress, data show that a very large number of people still do not have access to safe water or sanitation, and to achieve the goal of access to a sustainable water supply and sanitation system, annual progress must be doubled. The 2017 Report of the Secretary-General of the United Nations highlighted the need to make efforts to ensure access to energy and achieve targets for resource efficiency and renewable energy (UN, 2017). This required significant financial resources as well as the governments' commitment and willingness to implement new technologies on a wider scale. The 2019 report shows, however, that although there are still 800 million people without access to electricity, progress in this area has accelerated. Even though labor productivity has risen and unemployment has returned to pre-financial crisis levels, the global economy is growing at a slow rate and improvements are still needed to increase employment opportunities. Issues of inequality within and between nations are far from being addressed, and despite the fact that the income of 40% of the bottom population has increased, inequality in income distribution persists. Fast-growing cities can continue to pose a threat to habitat sustainability. Materials consumption jeopardizes the objective of ensuring a sustainable consumption and production plan. Consequently, urgent actions must be taken to ensure the need for materials without leading to overexploitation of resources and environmental degradation. More funds are needed to support actions to mitigate the effects of climate change that is occurring at a much faster pace than anticipated. Although global trends indicate progress in protecting terrestrial ecosystems and forests and ensuring biodiversity, the report indicates that there is a high probability that the targets set for 2030 will not be met due to continued land degradation and biodiversity losses.