Introduction

Climate change and ongoing economic and social transformations in the context of increasing digitalization have been posing a number of challenging issues for our societies. On the one hand, the industrialization waves across countries and the emission of greenhouse gases have been recognized as main factors that cause global warming and serious damage to environmental quality, human health and economic activities through natural catastrophes and abrupt weather changes. On the other hand, economic and financial crises over the recent decades have sparked off intense debate about new models for economic growth as well as on the efficient use of natural resources without creating harmful impacts on the living conditions of future generations. These challenges have pushed social stakeholders, businesses and governments around the world to initiate, encourage and adopt sustainable practices.

It is also important to stress that the 2015 United Nations Climate Change Conference in Paris (COP21) has made climate change an issue for the future of the whole finance industry and community. Accordingly, financial research, practices and initiatives should be an efficient pathway to direct investment flows towards sustainable development projects through, among others, low-carbon emission businesses, sustainable finance, renewable energy, clean technology and climate funding. This move is effectively the triple bottom line framework – the concept that has been introduced by John Elkington in his 1997 book *Cannibals with Forks: The Triple Bottom Line of 21st Century Business* and ultimately requires economic agents and policymakers to make decisions with respect not only to the financial dimension, but also to the social and environmental dimensions.

To date, the triple bottom line has become increasingly used as criteria to assess the sustainability of financial markets, industries, institutions and corporations. It particularly concerns: (i) the development of financial services and products to cope with sustainable investing and climate risk management; (ii) a regulation framework that guarantees the stability and resilience of financial markets as far as they provide a vital source of capital for economic growth; and (iii) the governance issues that aim to manage organizational risks, the corporate social responsibility culture, and the social-impact investing culture.

The *Research Handbook of Investing in the Triple Bottom Line* recognizes

the growing trends in sustainable finance and investing where social, environmental and financial measures are employed to evaluate the sustainable behaviour of economic actors and institutions. It places a special focus on the increasing research and practical initiatives related to, among other factors, impact investment, finance and sustainable development, socially responsible firms, the stock returns of sustainable firms, and financial instruments connected with sustainability issues.

The *Research Handbook* is composed of 20 topical and high-quality chapters which are grouped into three parts: 'Sustainability, Financial Stability and Fraud' (seven chapters); 'Sustainability and Financial Markets' (eight chapters); and 'CSR and Socially Responsible Investment' (five chapters). Part I treats the link between sustainability issues and system-wide financial stability. Part II is devoted to the role of financial markets in promoting sustainability through the development of impact investing instruments and regulation policies. Part III sheds lights on the emergence of socially responsible investors and the impact of their dedicated portfolio allocation, as well as firms' CSR commitments.

Part I of the *Handbook* begins with Chapter 1, 'Financial Regulation and Fraud in CO₂ Markets', by Joseph R. Mason. This chapter suggests that the inefficacy of the carbon markets in reducing CO₂ emissions could be explained not only by the low carbon allowance prices, but also by non-fundamental factors such as fraud (investors, corporations), counterfeiting and rent-seeking, which altogether influence the pricing of carbon emissions. By analysing the European Union's Emissions Trading Scheme's market for carbon emissions, the author shows that a good functioning of this market could not be guaranteed and the objective of carbon reduction would not be achieved if these various forms of fraud exist. The same situation can occur in other carbon markets, which could lead to their serious disruptions and destruction.

Chapter 2, 'How to Better Detect Cases of Financial Reporting Fraud: Some New Findings from Earnings Restatements', by François Aubert, Jean-François Gajewski and Lamya Kermiche focuses on the detection of frauds based on the managed earnings component (MEC) metric and discretionary accrual-based models. They show, from a comprehensive sample of Accounting and Auditing Enforcement Releases (AAERs) issued by the SEC, that the innovative managed earnings component metric of a firm as an independent variable provides a more relevant indicator of accounting fraud than cross-sectional models based on inspecting abnormal accruals. This finding should help regulators to improve fraud detection by preventing voluntary financial misreporting.

Chapter 3, 'Fostering Green Investment Decisions: The Real Option Approach', by Jessica Fouilloux and Jean-Laurent Viviani argues that

green investing decisions can be modelled by the real option approach, given its sequential and irreversible characteristics under uncertainty. Concretely, companies have an option to delay, make or extend a green investment such as a shift from polluting to green technologies. Their analyses show that the 'wait and see' approach of the traditional option theory is not appropriate to judge green investment opportunities.

Chapter 4, 'Exchange Rate Instability: Relative Volatility, Risk and Adjustment Speed', by Mohamed Ariff and Alireza Zarei looks at the issue of exchange rate volatility as it is critical to the management of a possible currency crisis. The authors develop four measures of relative instability (relative volatility; interquartile range; degree of co-integration; and speed of adjustment to benchmark currencies of peers) and show that they are useful for tracking, benchmarking and managing foreign exchange market instability, based on 14 international currencies.

In Chapter 5, 'Financial Instability: Economic and Financial Perspectives', Michael Dempsey reviews the academic research and theoretical models related to the market-wise financial instability issue, given its important impact on growth. The author shows that a better understanding of market instability could only be achieved with the recognition of deviations from market efficiency and equilibrium as well as of endogenous market cycles.

Chapter 6, 'The Stability of the Financial System: An Analysis of the Determinants of Russian Bank Failures', by Viktoryia Tankoyeva, Flavio Bazzana and Roberto Gabriele from University of Trento (Italy) shifts attention to the financial stability of banks and focuses on the case of Russia. The authors employ an early warning system and a contemporaneous model based on the CAMELS (Capital adequacy, Assets quality, Management, Earnings, Liquidity) approach. Their findings suggest that the Central Bank of Russia should have a closer look at the dynamics of CAMELS variables when assessing Russian bank solvency.

On a related issue, Kizito Uyi Ehigiamusoe and Hooi Hooi Lean in Chapter 7, 'Sovereign Wealth Funds and Macroeconomic Stability: Before and After their Establishment', analyse the nexus between SWFs and macroeconomic stability through various economic indicators. Their results suggest that the integration of the SWFs into a country's fiscal policy fosters macroeconomic stability, particularly when the SWFs are created with definitive objectives, effective management, accountability and transparency.

Part II of the *Handbook* addresses sustainability issues in financial markets and begins with Chapter 8, 'Financial Markets like Potter's Hands? Rethinking Finance for Sustainability in a Civil Society Perspective', by Giulia Porino, which discusses new ideas and directions for building a

sustainable financial system with a greater commitment from the civil society. The analysis leads the author to conclude that the participation of civil society organizations in the debate about sustainable finance plays a pivotal role in shaping the political agenda for financial reform policies.

Chapter 9 by Eleonora Broccardo and Maria Mazzuca offers ‘An Alternative Way to Think of Finance: The Case of Innovative, Sustainable Financial Instruments’. It investigates how financial innovations and financial engineering (particularly green bonds and social impact bonds) can contribute to sustainable development. Risk and challenges related to these newly proposed financial instruments are also discussed.

Chapter 10, ‘The Market Premium of Sustainability in Health-Care Sector Firms’, by G. Nathan Dong (Columbia University, United States) investigates whether health-care firms simultaneously achieve sustainability and financial performance. Interestingly, the author finds that sustainable firms are awarded a market premium in terms of market valuation, which is discounted for firms that have a higher level of environmental pollution.

In Chapter 11, ‘Environmental Sustainability and Inter- and Intra-Industry Variation in Stock Returns: International Evidence’, Harjap Bassan, Kartick Gupta and Ron P. McIver question the inter-industry and intra-industry (country-level) differences in terms of stock returns across firms which engage in environmentally sustainable practices. Their results show that market rewards for environmentally sustainable practices are not alike across industries. At the country level, stock returns are found to be negatively associated with low institutional quality.

Chapter 12, ‘The Role of Financial Markets in Promoting Sustainability – a Review and Research Framework’, by Mohammed Amidu and Haruna Issahaku provides a review of previous research on the link between finance and sustainable development. It shows that the literature mostly focused on sustainability financing and responsible investing as well as sustainable finance. By contrast, little is known about the sustainability implications of Islamic finance and regulation policies.

Chapter 13, ‘Financial Innovation with a Social Purpose: The Growth of Social Impact Bonds’, by Frédéric de Mariz and José Roberto Ferreira Savoia focuses on the analysis of the structure of social impact bonds, which have been developed to attain sustainable development goals (social outcome) through a public-private collaboration. Their results indicate that socially impact bonds can encourage a sustainable economy, but they need to be standardized and have strong support from the regulation bodies and governmental authorities.

Among the new financial instruments of climate finance, green bonds have been growing rapidly. In Chapter 14, ‘Asset Allocation and the

Green Bond Market’, K. Thomas Liaw reviews the risk-return characteristics of green bonds as well as their diversifying potential for portfolio investments. Besides the willingness to combat climate change, green bonds would be of great interest to investors if their returns are less than perfectly correlated with other existing financial instruments.

Similarly, in Chapter 15, ‘Demystifying Green Bonds’, Kathrin Berensmann, Florence Dafe and Nannette Lindenberg examine the potential and challenges of green bonds in making the ecological transition happen. They particularly question whether the rapid growth of green bond issuance is associated with a greener economy. Their analysis concludes with the limited contributions of green bonds to sustainable development under weak governance frameworks, as is the case today.

A large body of the literature and current debates on sustainability have focused on the adoption of CSR by organizations and on Socially Responsible Investment (SRI). Part III of this *Handbook* dedicates five chapters to these issues.

In Chapter 16, ‘Models of Corporate Socially Responsible Banks: Financial Cooperatives, Islamic Banks, and Micro-Finance Institutions’, Narjess Boubakri and Jocelyn Grira present three CSR models for banking firms: the model of cooperative financial institutions; the model of micro-finance institutions; and the Islamic banking model. For each model, the authors discuss successively its distinctive characteristics, its contributions to socioeconomic development, and its role in promoting ethical business standards and practices. Their findings point to a heterogeneity of CSR practices across financial institutions.

Chapter 17, ‘CSR Implementation in French SMEs: An Adapted Framework’, by Karen Delchet-Cochet and Linh Chi Vo focuses on the CSR engagement of French SMEs and discusses its implementation through two projects: the Global Performance procedure and the SD21000 implementation guideline. The authors stress the need for specific CSR implementation tools that are adapted to SMEs.

Chapter 18, ‘The Performance, Volatility, Downside Risk and Persistence of Socially Responsible Investments in Korea and the Impact of the Korean Green New Deal’, by Wei Rong Ang and Olaf Weber shows that the performance of SRI in Korea improves with the Korean Green New Deal, and the Korean sustainable portfolios are less sensitive to market downside situations than the conventional portfolios.

Chapter 19 by Christin Nitsche and Michael Schröder asks an intriguing question: ‘Are SRI Funds Conventional Funds in Disguise or Do They Live up to Their Name?’ It uses the ESG (Environmental, Social and Governance) ratings of three rating agencies (Oekom, Sustainalytics and ASSET4) to examine the rating differences between a European and a

global fund universe. Their results indicate a significant difference in ratings between the two funds, with the sustainable fund having higher ratings, while the holdings are relatively similar for both funds. Accordingly, the authors suggest that SRI funds do make investments with respect to their principles.

Chapter 20, ‘Socio-psychological Motives of Socially Responsible Investors’, by Julia M. Puauschunder seeks to understand the potential socio-psychological motives of socially responsible investors to engage in social impact investing. The author proposes a financial social responsibility framework that combines an SRI framework with social and psychological dimensions. Factors such as innovation and entrepreneurship, self-enhancement through identification and self-consistency, expression of social values, and long-term considerations appear to strengthen the financial social responsibility of economic agents.

Altogether, the diverse lessons and reflections presented in all the above-mentioned chapters are obviously indicative of an increasing awareness and application of the triple bottom line principle at various levels (firms, markets and economies). While sustainability makes sense and there is a good chance for SRI and system stability to succeed, many challenges exist, ranging from misconduct behaviour to regulatory frameworks and efficient financial innovations. Social and psychological factors, which influence the decision-making process of different shareholders, are also critical drivers of the move towards sustainability. Finally, it is important to recognize that the ‘one-size-fits-all’ statement does not apply to all actors involved in sustainable development.

We firmly believe that the *Research Handbook of Investing in the Triple Bottom Line* will provide readers with a comprehensive state of the art and an in-depth reflection on what has been done and what has to be done as far as sustainable and impact finance is concerned. Challenges ahead need to be better analysed and understood. We hope that stakeholders, and particularly investors, fund managers, firm executives and regulators will find this *Handbook* useful for planning their actions and strategies. Likewise, this collection of chapters will help students and researchers be better informed and find valuable materials to develop their research agendas.

We would like to take this occasion to thank all the contributors of this *Handbook* for their excellent commitment and fine contributions.

Sabri Boubaker
Douglas Cumming
Duc Khuong Nguyen