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The Research Handbook on EU Sustainable Finance

Regulation, Supervision and Governance

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1.1 INTRODUCTION

Sustainable finance began to occupy a prominent place in the European Union's policy agenda following the signing of the Paris Treaty on climate change in 2016 and the adoption of the United Nation's Sustainable Development Goals (SDGs).[1] The EU policy agenda was given significant support by the creation of the High-Level Task Force on Sustainable Finance in 2016, the EU Action Plan on Sustainable Finance and the Technical Expert Group on Sustainable Finance in 2018. The European Commission followed these initiatives by adopting the EU Green Deal in 2019 consisting of an ambitious package of legislative measures to assist EU citizens and businesses in benefitting from the transition to a sustainable green economy with particular focus on companies and the financial sector. The recognition of the urgency of financing the transition to a low-carbon economy and the need for mitigation of and adaptation to environmental sustainability risks are at the heart of the EU's sustainable finance strategy, which aims to mobilise and channel capital towards green and sustainable activities, products and projects.

Likewise, the EU's policy agenda and regulatory framework reflect the need to finance the green transition and limit the potential for risks and threats that could undermine economic and financial stability through a prudential approach to climate and environmental risk management, where financial institutions are expected to commit to building a resilient and sustainable financial system.

The COVID-19 pandemic also contributed to a major push for the EU's sustainable finance agenda, as it fostered the EU's green financial capacities through the NextGeneration EU (NGEU) instrument, where around 30% of the NGEU's Recovery and Resilience Fund (RRF) will be financed through green bonds.[2] The

[1] See THE 17 GOALS | Sustainable Development (https://sdgs.un.org/goals). In January 2015, the UN General Assembly began the negotiations on the post-2015 development agenda that culminated in the subsequent adoption of the 2030 Agenda for Sustainable Development, which included the 17 Sustainable Development Goals, at the UN Sustainable Development Summit in September 2015.

[2] European Commission, 'NextGenerationEU Green Bonds', available at: https://bit.ly/3V6APxo.

EU has also recognised the urgency for financial institutions to integrate ESG factors into their business models and risk management strategies, with the aim of ensuring that the entire financial sector plays a key role in driving the transition to a sustainable economy, and also intends to continue exploring new ways to increase the mobilisation of private capital towards sustainable investments.[3] On the latter, a number of important new policy initiatives have been emerging, but much remains to be done to address ESG-related challenges.

As policy developments are moving quickly, they represent a major challenge for financial institutions and their regulators and supervisors to adapt to these policy changes while at the same time striving to contribute to a resilient and sustainable economy and financial system. Recent EU legislation to address climate change and broader ESG challenges have precipitated a major debate across the Atlantic and globally regarding whether financial regulation and corporate governance should integrate climate and ESG concerns into day-to-day risk management and business practices. EU legislation, such as the Taxonomy Regulation, the EU Green Bond Standard, the Sustainable Finance Disclosure Regulation (SFDR), the Corporate Sustainability Reporting Directive (CSRD), the amendments to the Benchmark Regulation (extending its application to Climate Benchmarks) and the recently approved Regulation on ESG Rating Providers are influencing legislative and regulatory developments in many countries outside the EU. Not only can this legislation serve as a model for future reforms worldwide, but the EU regimes for the recognition of equivalence (or, in some cases, for the endorsement) of activities based outside the Union will inevitably have an impact on third-country service providers wishing to enter EU financial markets.

Moreover, the multiple manifestations of the environmental and climate crisis have brought a previously unknown spectrum of financial risks to the fore. Weather events and chronic shifts in temperature, as well as changes in policies and consumer preferences brought about by the transition to a low-carbon economy, are only a few examples of potential drivers of financial risks that can spill over into the banking and financial sector and the broader economy. Indeed, financially material environmental sustainability risks are posing major challenges for financial regulatory authorities.

As market actors have increasingly acknowledged the relevance of these risks, financial regulators and supervisors in countries outside of Europe have also started to take action to address them in their daily operations and supervisory activities. Transnational *fora* like the Network for Greening the Financial System (NGFS) have played a pivotal role in facilitating the exchange of best practices among central banks and other bank regulators in the design of crucial tools for the management and supervision of financially material physical and transition risks, such as the design of climate stress tests and scenario analysis. The Climate Financial Disclosure

3 For this task, the EU Commission has launched the International Platform on Sustainable Finance.

Standards (TCFD) led by the Financial Stability Board have provided a benchmark for disclosure approaches that some major corporates have taken up on a voluntary basis, while the International Organisation of Securities Commissions (IOSCO) has made progress in further developing disclosure standards for listed companies that are more standardised and comparable. And the International Sustainability Standards Board (ISSB) has begun work on how to incorporate sustainability risks into accounting valuation methodologies. The G20/OECD Principles of Corporate Governance, in their 2023 edition, address companies' sustainability and long-term resilience by focusing on environmental and social risk management.

It is of utmost importance therefore for regulators and supervisory authorities to understand as well as to engage in a constructive dialogue on environmental and social-related financial risks with corporate boards and senior management. Sharing and learning from best practices are essential steps which could contribute to the global sustainable finance agenda. Against this backdrop, ESG challenges, including climate-related financial risks, have profoundly transformed, and may transform in the not-so-distant future, business strategies, governance practices and risk management.

In light of these developments, this book was undertaken as part of the research project supported by the Jean Monnet Centre on European Union Sustainable Finance and Law (EUSFiL) at the University Genoa and the Research Network for Sustainable Finance. The EUSFiL Jean Monnet Centre and the Research Network assembled a group of academics and practitioners whose research focusses on the legal implications of the integration of sustainability in the corporate and financial sector. The group of contributors to this volume comes from across disciplines, including law, economics and finance, management and accounting. They have approached their topics from the perspective of how ESG challenges are transforming how we understand the law and regulation of corporate governance and banking and financial market activities. Indeed, the work of the authors contributes to the book's overall theme of developing a better understanding of how ESG challenges are transforming financial regulation and supervision and the governance of institutions and firms from a European and comparative perspective.

Although the main focus is on developments in the European Union, the book also provides a comparative analysis between the EU and other countries outside Europe, such as the United States. The chapters aim to provide the reader with relevant knowledge and analytical tools to better understand and critically reflect on the potential opportunities and challenges posed by the new legislative and regulatory developments in the area of ESG and sustainable finance. The book's content and analytical focus is relevant for academics, policymakers, financial regulators and supervisors, and private finance and corporate governance practitioners.

The book is divided into 5 parts and 29 chapters. Part I consists of the chapter entitled 'Taking Financing Seriously: Understanding the Financial Risks of Unsustainability', which addresses various areas of corporate law and governance in the context of ESG management and stakeholder theory. In this chapter, Beate Sjåfjell investigates the relationship between finance and sustainability through a broad analysis of the risks of unsustainability beyond the established scope of financial risks related to climate change. She analyses the problems of the mainstream approach to finance, sustainability and risks, and reviews the ongoing development of a framework to manage the financial risks of biodiversity loss. She discusses the research-based concept of sustainability and how the concept of planetary boundaries has significance in finance on three interconnected levels: first, it reminds us of the ecological limits; second, it highlights the complex interaction between planet-level environmental processes and that climate change is only one aspect of the convergence of crises; third, it emphasises the importance of using the state-of-the-art natural science in making decisions on a work-in-progress basis. She also explores a systemic approach to Anthropocene risks and analyses the financial risks of unsustainability in the categories of transition, physical and societal risks. She concludes with brief reflections on the necessity of implementing a research-based approach to risks of unsustainability in law, policy reforms and practice as well as the legal basis in the European Union for achieving these tasks.

Part II, entitled 'Ethics and Sustainability in Corporate Law, Corporate Governance and Conduct', consists of seven chapters, which examine how the new concerns on sustainability and business ethics meet traditional theories on corporate governance and corporate conduct. In Chapter 3, 'Firm Value versus Social Value: Dealing with the Trade-Offs', Guido Ferrarini examines the main trade-offs between the economic value and social value of the firm and discusses how they are solved through corporate governance mechanisms under ethical and regulatory constraints. In doing so, he analyses how enlightened shareholder value (ESV) under the influence of stakeholder theory involves trade-offs between firm value and social value. He argues that the purpose of the corporation should be redefined in terms of shared value, not just in terms of shareholder profit maximisation. He then discusses the recent criticism of ESV from the perspectives of radical shareholder value and social value primacy. He suggests that ESV is conveniently complemented by business ethics, soft law and regulation. He further explores recent scholarship on corporate governance and organisational theory and analyses the theory of corporate purpose and the organisational perspective on corporate purpose in connection with sustainability. He further develops his argument to show how business ethics, soft law and regulation constrain the maximisation of firm value by forcing enterprises to internalise some of the externalities produced in their activities. Finally, he concludes that enlightened shareholder value explains how the pursuit of stakeholder value contributes to firm value maximisation and the creation of social value. The board of directors should identify the ethical and cultural values of the firm and monitor their application at all levels. In this regard, organisational purpose should play a fundamental role in the intrinsic motivation of people in corporations.

In Chapter 4, 'The Hardening of Corporate ESG', Genevieve Helleringer and Christina Parajon Skinner discuss how major businesses worldwide have declared their commitment to the stakeholder model, and how a growing number of firms have carried their stakeholder commitments forward in the form of environmental, social and governance (ESG) initiatives. This chapter questions whether the current trend of ESG that stakeholderism is a sustainable business practice over a longer time horizon and discusses how voluntary corporate ESG commitments have hardened into more formal sources of law and regulation in the US, EU and the UK. It first explores the domestic legislative initiatives in France and Germany and their potential to inspire EU ambitions before exploring the legislative initiatives in the EU and the UK, respectively. It then explores the legislative and regulatory changes in the USA at the federal and state level and how court rulings have recognised ESG norms as instruments of transforming soft ESG commitments into hard common law precedents. Finally, it argues that the hardening of the ESG commitments into formal law may risk fossilising unworkable standards for firms and forcing misallocations of capital over time as the new ESG-related rules and regulations are bound to bump up against the existing fiduciary duties of firm managers and board directors. Moreover, the EU rules on the value chain will become binding rules extraterritorially as the European value chain requirements may leave little margin of negotiation for US suppliers.

Monika Marcinkowska addresses stakeholder engagement in Chapter 5, 'Stakeholder Engagement'. She contends that stakeholder engagement is a cornerstone for the implementation of the Sustainable Development Goals (SDGs). The SDGs framework can be defined as a pragmatic stakeholder engagement model and financial institutions play a key role in achieving the SDGs through their indirect influence on a wide range of stakeholders, including customers and partners. Stakeholder engagement is essential in the implementation of a sustainable financial strategy and the management of stakeholder engagement is crucial in terms of assessing the sustainability of the financial institution. With this backdrop, she reviews stakeholder theory by analysing the concepts of stakeholders in the context of contract theory and corporate social responsibility, and of financial firms' responsibility in the four categories of economic, legal, ethical and discretionary responsibility. Finally, she reviews the concept of relational capital, which represents the totality of the firm's relationships and links with its stakeholders based on mutual trust. She then discusses the four stages of stakeholder engagement management, including the identification of stakeholders, stakeholder analysis, stakeholder prioritisation and selection of engagement strategies, and monitoring and evaluation of stakeholder relations. She concludes that creating value for shareholders requires meeting the specific expectations of different stakeholder groups and that conscious stakeholder relationship management is required to effectively create this value. Fundamentally, stakeholder relationship management is an ongoing process and successive iterations should be carried out periodically. A company's stakeholder engagement strategies may need to be adapted as the company's environment and stakeholder expectations evolve over time.

In Chapter 6, 'Bank Governance and Sustainability', Kern Alexander discusses the importance of decision-making and agency problems in bank governance with particular focus on the role of the board of directors in addressing sustainability risks that are increasingly affecting the banking business. He discusses the centrality of the banking business and the role it can play in leading the economy in the transition to net-zero carbon emissions and other sustainability objectives. The chapter then considers traditional agency theories that underpin corporate governance and suggests that they do not offer a full explanation of the 'collective' agency problems that exist in large, complex organisations, such as banks and other financial institutions. Human agency theory offers an alternative theory that emphasises the importance of organisational culture in determining standards, norms and values that influence agent behaviour. The importance of the board is considered in ensuring an adequate risk culture to address organisational failings and in confronting new business challenges, such as climate financial risks. Although the role of bank boards and senior management is primary, regulatory intervention may be necessary to ensure that organisational practices are adequately managing agency problems regarding sustainability concerns. The UK Senior Manager's Regime is considered an intrusive approach involving regulators holding bank boards and senior management personally accountable for regulatory failings as well as designing and complying with the organisation's sustainability strategy. The chapter concludes with some recommendations for how bank governance and business practices could be improved to support society's sustainability objectives.

In Chapter 7, titled 'Risk Culture and Sustainability', Paola Schwizer, Simona Cosma and Lorenzo Nobile address the challenge of regulating risk culture in companies in order to achieve sustainability outcomes. The authors note that a risk-based cultural approach that embeds sustainability values could support the adoption of pro-environmental strategies (PES) by corporations. The chapter investigates the relationship between risk culture and drivers of environmentally sustainable behaviours that could encourage the adoption of PES by board members. It analyses a survey of 120 Italian board members to test the relationship between individual risk culture and beliefs, attitudes and norms. The authors then explore the literature on corporate culture, sustainability culture and risk culture. Corporate culture is a driving factor of sustainability performance, and the failure in cultural change can be an obstacle to sustainable development. Sustainability culture implies the importance of environmental and social objectives in addition to financial performance and has qualifying characteristics such as long-term orientation and the maximisation of stakeholder value. Risk culture refers to the corporate culture that focusses on risk-taking and risk-control activities. The goal of risk management is not only the elimination of risk but also the search for an optimal balance between risk assumption and risk prevention and mitigation. The chapter then analyses the governance of emerging risks as a key driver for sustainability using Ajzen's theory of planned behaviour (ATPB). It tries to establish whether a stronger risk culture is positively related to more favourable assumptions and implicit values, which refer to beliefs about the types of goals firm members should pursue as well as ideas regarding standards of behaviour. The authors conclude that a positive relationship between directors' level of risk culture and behavioural, normative and control beliefs exists. Thus risk culture must be shaped to incorporate sustainability-related values throughout the organisation and the management style must be adapted to the risk culture to enhance the ability to explore new market opportunities.

In Chapter 8, 'Conduct Risk as a Possible Approach for Enhancing Awareness and Management of ESG-related Risks', Antonella Sciarrone Alibrandi, Claudio Frigeni and Giulia Schneider address how severe misconduct patterns in financial firms impact market integrity and financial stability. To this end, the chapter explores the sources and features of conduct risk, which they consider a direct result of poor firm culture and the outcome of short term–oriented business models. The misconduct problems in financial firms are related to both retail conduct risk and wholesale conduct risk, and European supervisory authorities have made policy statements and guidelines on managing conduct risk. However, uncertainties persist regarding what conduct risk exactly is, and what types of risk it encompasses. In this regard, the chapter highlights that conduct risk is sometimes understood in a flexible manner, encompassing all the sources of misconduct that can lead to poor outcomes for the customers, particularly in conjunction with the violation of extra-legal parameters. In other contexts, instead, conduct risk is meant to be a subset of operational risk. Against this backdrop, this chapter discusses the role of conduct risk in the evolving ESG-related regulation initiatives and argues that the flexible and cultural-sensitive nature of conduct risk makes it an effective tool for the forecast, correction and prevention of potentially harmful misconduct directly stemming from the missed or wrongful enactment of ESG policies. Therefore, while conduct risk does not coincide with ESG risk, it may be a tool to reconsider internal risk management systems with a view to reduce the risk of inappropriate behaviour that may lead to unsustainability, thus also strengthening bank stability in a prudential perspective.

In Chapter 9, entitled 'Sustainability and Executive Compensation', Roberto Barontini and Jennifer Hill observe that executive pay has undergone several major interpretations in recent decades, while a more complex picture of the corporation has emerged as the source of negative externalities from misconduct, corporate scandals and financial crises. The chapter provides an overview of developments relating to the design and regulation of executive pay over the last few decades, including the rise of integration of sustainability and ESG targets into executive compensation packages. It also examines the reasons for this development through empirical analyses focussing on the prevalence of this trend in publicly listed companies. This involves a short history of executive compensation in three aspects: a corporate theory of executive compensation design, post-scandal regulatory responses to executive compensation from Enron to the Global Financial Crisis, and executive compensation in the ESG era. The authors then provide an empirical analysis of the prevalence of 'pay for sustainable performance' in contemporary executive compensation contracts. In doing so, the chapter examines the macro-determinants of ESG compensation and the financial and corporate governance variables that influence the ESG performance and communication of the firm. The authors conclude that the increasing integration of ESG targets in executive compensation as a result of pressure from both regulators and institutional investors could be ineffective, given the risk of agency problems and greenwashing. Therefore, it is unclear whether the trend of integrating ESG into executive compensation will continue and whether it will translate into more sustainable corporate practices in the future.

Part III, entitled 'Integrating Sustainability in Financial Markets Regulation', consists of eight chapters addressing the evolving relationship between capital markets and their traditional institutions on the one hand, and the new trends in sustainability and ESG-related preferences on the other. In Chapter 10, 'Sustainability-related Materiality in the SFDR', Nathan de Arriba-Sellier and Arnaud Van Caenegem analyse the EU Sustainable Finance Disclosure Regulation (SFDR) by proposing that we should think about the SFDR as a layered system of sustainability-related disclosures, which combine the concepts of 'single materiality' and 'double materiality'. The authors offer a new perspective on popular proposals to turn the SFDR into a labelling scheme but argue that supervisors should avoid such avenues. The chapter explains the difficulties that arise from the vaguely defined principle of 'sustainable investment' under the SFDR. The SFDR provides a framework within which financial market participants can define their own objectives and contributions. Therefore, the chapter emphasises that it is not the definition of 'sustainable investment' which is relevant, but the additional disclosure requirements that apply as soon as a financial market participant deems its financial product to be in line with the definition. The SFDR encourages robust internal assessments over blind reliance on opaque ESG rating agencies and provides financial market participants with the freedom to justify what a contribution to an environmental or social objective means. This freedom sets it apart from a labelling mechanism with a clearly defined threshold of what a contribution should entail. The chapter also analyses proposed guidelines by ESMA for regulating the names of investment funds that involve sustainable investment, and concludes that those guidelines do not create a clear labelling regime since they primarily focus on disclosure rather than providing a specific framework for classifying financial products.

In Chapter 11, 'Information Intermediaries and Sustainability: The Case of ESG Ratings and Benchmarks', Matteo Gargantini and Michele Siri analyse the important role of information intermediaries, such as ESG ratings agencies and administrators of sustainability benchmarks. The chapter compares the rationale for regulating traditional providers of ratings and benchmarks with the market failures characterising those services when they focus on sustainability. The results of the comparison vary, in part, depending on the role ESG factors play. For instance, while credit ratings often include ESG factors in their assessment with a view to determining reputational and other risks (outside-in perspective), sustainability ratings that focus on impact alone (inside-out perspective) may have a different nature. In a double materiality perspective, issues of asymmetric information and agency problems may therefore be more pervasive for sustainable ratings and benchmarks compared to their traditional peers. However, those services may also be more prone to regulatory failures, if only because knowledge problems seem to affect regulators and supervisors just like investors and other users of ratings and benchmarks. In the authors' view, the EU Regulation on Benchmarks, which already provides a general framework and specific rules for sustainability benchmarks, strikes a good balance in that it addresses the most critical features of indices while calibrating its provisions in light of the benchmark's features. On the contrary, the current lack of rules concerning ESG ratings warrants adequate policy measures. While this gap will soon be filled by an EU Regulation, the authors express some doubts on the regulatory strategy behind it.

Veerle Colaert assesses in Chapter 12, 'On the Sustainability of the MiFID II and IDD Investor Protection Frameworks', the extent of integration of sustainable finance into the market in Financial Instruments Directive II (MiFID II) and the Insurance Distribution Directive (IDD) investor protection frameworks. Sustainable finance has become a new EU priority and a substantial number of measures proposed in the Eighth Climate Action Plan that the European Commission adopted in March 2018 have led to important changes to the MiFID II and IDD investor protection frameworks. As background, she explains why retail investors do not always act upon their investment preferences and the role of the investment product distributor in remedying investors' value-action gap. She discusses the main changes to the MiFID II and IDD investor protection frameworks and the challenges of the revised legal framework by analysing the new sustainability-related definitions, the amended product suitability assessment, the amended product governance process and the amended conflicts of interest procedure. She argues that full cross-sectional consistency will not be achieved in the EU investor protection framework as only the MiFID II and IDD frameworks have been amended while rules covering other product distributors remain the same. She critically evaluates the revised investor protection rules for the suitability test, product governance and conflict of interests. She also addresses the problems of inconsistency caused by sustainable finance amendments to existing legislation. Finally, she discusses the problems of applying the definition of sustainability preferences, which refer to concepts of the Taxonomy Regulation and the Sustainable Finance Disclosure Regulation, and the lack of complete a Taxonomy covering social and governance perspectives in the amended MiFID II and IDD obligations.

In Chapter 13, on 'The EU Taxonomy Regulation and the Prevention of Greenwashing', Marleen Och examines how the EU Taxonomy Regulation provides definitions to determine whether an economic activity is environmentally sustainable and therefore suitable for sustainable investment. While the Taxonomy Regulation is a significant step forward in promoting sustainable finance, she argues that the current framework falls short of reaching the proclaimed investor protection goals due to the complexity and scope of the project as well as its interdependence with the overall sustainable finance framework. She further argues that a sufficient level of investor protection would be reached once the entire portfolio is measured against a more comprehensive Taxonomy Regulation covering all economic activities. She provides an overview of the Taxonomy Regulation by exploring the goals, scope, criteria for environmentally sustainable activities and the types of economic activities that the Taxonomy allows as substantially contributing to environmental objectives. She also discusses the link between the Taxonomy and the overall sustainable finance framework of the EU. In doing so, she analyses the capacity of the Taxonomy Regulation to protect investors, focussing on the prevention of greenwashing. After identifying ambiguities and gaps in the Taxonomy Regulation, she proposes possible solutions. She concludes with an emphasis on the need to extend the Taxonomy Regulation to provide sufficient investor protection against greenwashing by providing more precise definitions and thresholds for social and governance aspects of sustainability in addition to environmental aspects.

Chapter 14, 'Integrating Sustainable Finance into the Prospectus Regulation', Iris Chiu and Pierre Schammo address important questions about how best to regulate the green bond market and ensure that investors are meaningfully protected against greenwashing. The chapter examines whether the EU prospectus framework caters to the needs of such specialist securities (i.e., sustainable securities products) and argues that specific green bond prospectus requirements should be introduced. It discuses the rationale for mandatory prospectus disclosure in general and in relation to sustainable finance more specifically. It emphasises the important role of the European Commission, as set forth in its action plan on sustainable finance, to identify prospectus regulation, particularly for green bonds, as a field where policy action is required. It also examines the market for specialist securities and discusses current market initiatives. The chapter also discusses the attempt to address the regulatory gap in the green bond market through the EU regulation on green bonds (the 'EuGB'). The EuGB is incentive-based, but it is argued that its success will depend on the market response, considering the tendency of all investors to discount long-term social costs such as the consequences of climate change. It further argues in favour of mandatory green bond prospectus requirements as the voluntary approach is unlikely to offer a long-term solution for credible investor protection or the building up of the sustainable finance markets. It concludes that further work needs to be done for EU policymakers to engage in a proper dialogue on prospectus liability in a green bond prospectus framework.

In Chapter 15, 'Disclosure Regulation and Sustainability', Kern Alexander and Aline Darbellay analyse cross-border developments in home and host country regulation of sustainability disclosure. In doing so, they analyse disclosure obligations of environmental and social sustainability risks that apply to companies in light of the growing importance to disclose sustainability risks and the potential cross-border strategies for countries to develop international standards to support global convergence. The chapter considers the international developments justifying the rationale for sustainability-related disclosures along with a discussion of the three models of cross-border disclosure regulation: (1) the home state approach, (2) the host state approach and (3) the equivalence approach. The chapter argues that the 2022 EU Corporate Sustainability Reporting Directive (CSRD) has adopted a mix-and-match model between the host state approach and the equivalence approach. The analysis emphasises the extraterritoriality of EU sustainability disclosure regulation and compares it with the models followed by the United Kingdom, the United States and Switzerland. The different sustainability disclosure requirements between EU countries and non-EU countries suggests, therefore, that cross-border regulatory coordination is important. The chapter recommends a model of ESG disclosure for capital markets that is based on the EU policy of equivalence modified by a recognition of the compliance approaches of certain foreign jurisdictions.

In Chapter 16, 'Institutional Investors as the Primary Users of Sustainability Reporting', Gaia Balp and Giovanni Strampelli analyse one of the main pillars of the European Commission's strategy for financing the transition to a sustainable economy: harmonised sustainability reporting. The chapter argues that sustainability reporting is essential to giving substance to a company's sustainability strategy. Under various EU non-financial reporting initiatives, sustainability reporting has resulted in a shared classification system for sustainable activities, ranging from how to reduce greenwashing to how to assist institutional investors in meeting their disclosure obligations under the Sustainable Finance Disclosure Regulation. Institutional investors remain the primary users of corporate sustainability disclosures, but sustainability reporting facilitates interaction between investors and other stakeholders, such as NGOs, as a lever by which to enhance stakeholders' voice and to overcome the limited ability of broadly diversified institutions, especially passive fund managers, to actively monitor portfolio firms and reduce systematic portfolio risk. The chapter further argues that in order for EU sustainability reporting to deliver on its promises, two factors are crucial: first, the current fragmentation of non-financial reporting standards based on different frameworks and, particularly, on diverging notions of materiality, should be overcome. Second, an adequate balance between the narrative and quantitative dimensions of sustainability reporting should be struck in order not only to make sustainability disclosures meaningful for its users, but also to allow for mutually connecting and achieving coordination between financial and non-financial information.

In Chapter 17, 'The Role of Non-financial Disclosure and Liability in Sustainable Finance', Sebastian Mock assesses the role of non-financial disclosure and liability in sustainable finance. He considers the integration of corporate social responsibility in financial reporting following the enactment of the European Non-financial

Reporting Directive (2014/95/EU) and raises questions about the relationship between financial disclosure and non-financial disclosure and the influence of non-financial disclosure on sustainable finance. In doing so, he explores the history of non-financial disclosure in two parts: the international origin of non-financial disclosure and the European regulation of non-financial disclosure. He then examines whether non-financial disclosure and sustainability have a common core or address the same issues by analysing the following three aspects: the scope of application, the content of reporting and the procedure for examining sustainability information. He discusses the liability for incorrect non-financial/corporate sustainability disclosure and points out the lack of a harmonised legal regime for civil liability for incorrect non-financial and corporate sustainability disclosure in the EU and points out the problem of applying the established civil liability regime for financial disclosure to non-financial disclosure. Finally, he highlights the fundamental difference between financial reporting and non-financial reporting as the former is a number-based information instrument while the latter is a text-based information instrument. Since the existing civil liability regime for financial disclosure cannot be used for incorrect non-financial disclosure cases, it is recommended to develop an independent regime of civil liability for incorrect non-financial disclosure.

Part IV, 'Ensuring Financial Stability and Sustainability', consists of seven chapters. In Chapter 18, 'Macroprudential Policies and Climate Risks', Seraina Grünewald discusses recent efforts by companies to build capacity to manage 'climate-related financial risks' (CRFR) and to identify opportunities from the low-carbon transition. As macroprudential policy has the objective of safeguarding the stability of the financial system by increasing its resilience to shocks and preventing the build-up of vulnerabilities, this chapter discusses the potential role of macroprudential policy in addressing the risks posed by climate change and argues that CRFR falls into the system-wide and preventive approaches. The chapter explores the physical, liability and transition risks that drive the CRFR and analyses climate risks as a macroprudential concern. It highlights the market failures of data gaps and methodological challenges in capturing CRFR and argues that macroprudential policy has a role to play in green finance. It then provides an analysis of the assessment of climate risks and discusses scenario analysis and macro-stress testing as soft macroprudential instruments. It also analyses whether and how the existing macroprudential toolkit is fit to build resilience against CRFR and examines the potential use of hard macroprudential tools against climate-related shocks. It concludes the analysis by arguing that macroprudential policies may play a key role in assessing and managing CRFR and the use of hard macroprudential tools may help foster robustness and resilience of the banking system against climate-induced shocks.

In Chapter 19, 'Integrating Climate Risk in Banking Regulation', David Ramos Muñoz discusses how climate change risks are being integrated into bank regulation. He finds that Pillar 1 of the Basel bank capital framework, which focusses on the calculation of capital requirements, lacks emphasis on climate change risks and broader environmental sustainability. He argues that this gap in regulatory coverage leaves the core of banking regulation maladjusted. He argues instead that bank regulatory disclosure requirements, set forth in Pillar 3 of the Basel Framework, are the most efficient way to assimilate climate risks into banking regulation. However, the path towards more relevant and comprehensive disclosures is complex and consists of various strands. The chapter discusses the three main approaches to disclosure: (1) the Non-financial Reporting Directive (NFRD), (2) the bank-specific Basel Pillar III disclosures and (3) the efforts of authorities like the EBA or the ECB. The chapter argues that while disclosures and market discipline are helpful, bank governance and supervision must be 'acclimatised' to climate change, particularly through the Supervisory Review and Evaluation Process (SREP) found in Pillar 2 of the Basel Framework. The chapter criticises the current state of integrating climate change finance risks into banking regulation as too slow because it follows a path of minimum resistance by emphasising the role of disclosures and exit strategies before seeking a more proactive regulatory stance that emphasises governance and supervision, leaving the use of penalty/coercion-based tools as a last resort. Finally, the chapter discusses the conceptual legal and non-legal challenges faced in addressing climate change in the financial sector and recommends adjustments to risk management methodologies to assess and allocate climate risks more accurately and to fix the flaws in the existing regulatory framework.

In Chapter 20, 'Prudential Requirements Framework and Sustainability', Jens-Hinrich Binder considers the growing attempts to adjust existing micro-prudential regulation arrangements to incorporate sustainability considerations at the international and European levels. The chapter discusses whether the existing framework of prudential requirements and tools can realistically fulfil the new mandate and to what extent the existing mandate could be affected by the introduction of new objectives and technical features. The focus is given to the activation of micro-prudential regulation of banks and other financial intermediaries in the context of a broad sustainability agenda and the regulatory developments within the EU. In doing so, the chapter explores the historical evolution of micro-prudential regulation of financial intermediaries and assesses the capacity of the existing toolbox for the promotion of sustainability objectives. It then examines the relevant policy initiatives at the European level and the current legislative framework as well as the steps towards implementation. The author observes that while there has been considerable progress in developing definitions of relevant ESG risk factors and recommendations relating to methodological matters, progress has been more limited in determining the link of causation between specific ESG risks and an individual firm's profitability. He also provides a critical assessment of different approaches to sustainability regulation in the EU and analyses the different uses of established micro-prudential regulatory tools by comparing a defensive strategy and a supportive strategy. He also argues that the increasing use of stress tests as a means of exploring the resilience of regulated institutions could be helpful if the tests are institutionalised and carried out regularly. Based on his analysis of the functional capacity of the existing micro-prudential toolbox and the limitations of data to show a link between ESG risks and individual bank performance, he concludes that a more cautious approach should be adopted by regulators in requiring banks to address ESG risks.

In Chapter 21, 'Sustainable Finance under EU Law: The Gradual Shift from Capital Markets to Banking Regulation', Christos Gortsos provides an overview of the so-called EU banking package of legislative proposals that address sustainable finance issues and discusses the policy rationale for the Capital Requirements Regulation (CRR) and Capital Requirements Directive (CRD) by highlighting the most relevant conclusions in recent European Commission and EBA reports. The chapter shows how the regulatory influence of sustainability is shifting from capital markets alone to banking regulation as well, and recollects the joint role played by the manifold Commission's initiatives on sustainable finance and capital markets integration. These initiatives involve banks in various respects. First, while not directly applicable to them, the most significant legislative tools in capital markets law nonetheless play a role in shaping the regulatory context for credit institutions. Second, the reform packages of the CRD and the CRR, which the chapter describes in detail, are expanding the role of sustainability in the banking sector. The chapter describes how, in the EBA's view, 'ESG factors' and 'ESG risks' should be included in the bank regulatory and supervisory framework, and highlights the effects of the new measures on the treatment of ESG-related risks. All in all, the new framework will deeply influence the way ESG risks affect bank strategies and processes for evaluating internal capital needs and adequate internal governance.

In Chapter 22, 'Sustainability and Fit and Proper Testing in the Boards of Banks, Insurers and Investment Companies', Iris Palm-Steyerberg discusses the central question of whether and to what extent sustainability can be integrated into fit and proper testing for bank board members and senior management. Fit and proper testing is a supervisory tool in the EU to ensure that members of the management body possess the necessary knowledge, skills and expertise to perform their function. The chapter first analyses the impact of sustainability on the roles and responsibilities of boards and individual boardroom members in financial institutions. Members of the management body have a decisive influence on the course of the institution and are responsible for all major decision-making processes. Therefore, the chapter argues that the management body should also take the lead in ensuring that sustainability risks and the impact of the institution on sustainable factors are adequately managed. Moreover, the chapter examines how sustainability translates into the five criteria of the fit and proper test, which consist of (1) individual expertise, (2) collective suitability, (3) sufficient time commitment, (4) independence of mind and conflicts of interest and (5) good repute/properness. EU regulators and supervisory authorities have recently included ESG aspects in the fit and proper test, specifically related to the criteria of individual expertise and collective suitability. The chapter explores the relationship between collective and individual suitability. The responsibility for sustainability can be assigned to a dedicated ESG director. However, the author argues that this does not remove the need to integrate sustainability into all relevant parts of the organisation, nor does it relieve the other board members of their responsibilities. The chapter also refers to the supervisory practices of the Dutch Central Bank in assessing individual expertise of members of the management body, which integrates this criterion into fit and proper assessments. The chapter concludes that ESG affects all five elements of the fit and proper test. It suggests that other countries may want to follow the example of the Netherlands, which are the lead supervisors in integrating ESG into fit and proper assessments.

Arthur van den Hurk, in Chapter 23, entitled 'Integration of Sustainability Risks and Sustainability Factors in Insurance Regulation', provides an analysis of how sustainability risks affect the insurance industry and the risk-based measures adopted by EU regulators to affect these risks. The chapter begins with a summary of the European Commission's action plan 'Financing Sustainable Growth', which specifies the integration of sustainability into so-called fiduciary duties in sectoral legislation following the objective of facilitating green investment. With this background, the chapter discusses the integration of sustainability risks and sustainability factors into EU insurance regulation. It defines the meanings of sustainability risks and sustainability factors in the context of insurance undertakings and then describes the quantitative and qualitative requirements of the EU Solvency II framework. In particular, the framework intends to capture all material risks that an insurance undertaking may be exposed to, regardless of the nature of the risk, and points out the importance of having a resilient system of governance. The author then discusses the fiduciary duties described in the Action Plan and points out that fundamental differences between different types of financial undertakings and their relationships with their clients and capital structures should be reflected when sustainability risks and factors are considered. He then analyses the integration of sustainability in the Solvency II framework in three parts: (1) amendments to the Solvency II Delegated Regulation, (2) reflection of sustainability risks in the ORSA and (3) the prudent person principle in Solvency II. Within the prudent person principle, four observations are highlighted: (1) Article 132(1) applies the prudent person principles to all assets of the insurer; (2) Article 132(2) distinguishes between different types of liabilities; (3) Article 132(2) suggests that the prudent person principle applies to the portfolio of assets; and (4) the investment rules apply to all assets regardless of the financial liabilities they intend to cover. Finally, climate change scenarios and climate change transition plans are discussed along with the importance of considering potential amendments of the solvency capital requirements to consider sustainability risks to address the uncertainties as to the extent of sustainability risk for insurers and whether further sustainability considerations should be included in the Solvency II review process.

In Chapter 24, 'Sustainability Enforcement through Multilevel Financial Tools', Tomasz Braun considers the diverse ranges of pro-climate policies and regulatory measures that contribute to the growing universal recognition of the need to take policy and regulatory actions to protect the environment. The chapter analyses pro-climate policies and regulatory trends that support environmental and social sustainability and explores the bottom-up approach to sustainability policy implementation, stressing the need to accept multiple tools to enforce the policies adopted at the supranational level that have a cross-border impact. He discusses the top-down financial instruments that are being used by multi-level regulatory powers such as public debt instruments and green, sustainability and social bonds and their sustainable impact on the economy. He further discusses the need for unifying sustainability enforcement measures at the global level, arguing that properly implemented multi-level enforcement of sustainability programs could promote EU integration and economic development. He then analyses the interrelations among sustainability enforcement tools and corporate practices, suggesting that all stakeholders must counter environmental wrongdoings. By exploring the use of financial instruments as effective enforcement tools in global environmental policy governance, he argues that an effective strategy should involve an informed debate that engages stakeholders to assess the effectiveness of these financial instruments. He further argues that sustainability enforcement requires a corporate ethical integrity, and concludes that the lessons on sustainability policy implementation taken from the financial industry are useful in solving problems in sustainability enforcement.

Part V, entitled 'Financial Innovation and Sustainability', contains five chapters. In Chapter 25, Filippo Annunziata discusses in 'Can Financial Regulation Truly Support the Reduction of CO_2 Emissions? The Complicated Puzzle of EU Emission Allowances' how the European system for trading carbon emissions was first set up in 2003 within the broader framework of the Kyoto Protocol and the international agreements for the reduction of CO_2 emissions. The EU Commission endorsed the position that Emissions Trading Schemes (ETS) would provide a strong contribution to the global reduction of CO_2 emissions, and an EU system for trading carbon in the EU. Allowances (EUAs) were established to implement the ETS system in the European Union, which occurred in four phases. The author discusses the literature focussing on the assumption that emission allowances trading schemes produce positive externalities. He then analyses the emission allowances within the scope of capital markets and financial legislation, particularly under MiFID I, MiFID II, MAR and REMIT. He also explores the utility of exemptions applicable to emission allowances trading in MiFID II and the consequences arising from the MiFID II approach. He then discusses the pros and cons of the inclusion of EUAs into the full scope of MiFID and argues that the structure of MiFID, with its complicated exemptions, and the interplay between MiFID and other legislative measures that affect EUAs, has resulted in a complex regulatory landscape. There is no strong evidence that the inclusion of EUAs in the scope of

MiFID may effectively impact the reduction of emissions. He concludes that the reform of secondary trading in EUAs advanced by MiFID II militates against the economic effectiveness of the EU ETS.

In Chapter 26, entitled 'Climate Risk and Financial Markets: The Case of Green Derivatives', Paolo Saguato provides a US perspective on the potential for regulating green derivatives. The chapter first discusses the increasing need for significant private and public investments to meet the goals set by the EU Green Deal, which has influenced and incentivised the development of green derivatives markets. This chapter analyses the role of derivatives markets that can contribute to the green transition, enable private markets to raise capital towards sustainable goals and help market participants to manage the market and transition risk to a sustainable economy. The author provides a primer on derivatives markets, focussing on their role and functions in the financial system, and explains how derivatives can support sustainability goals by managing physical and transition risk. He then discusses how markets have incorporated ESG considerations into derivative contracts, and provides an overview of current private initiatives in the green derivatives markets. He also examines the current public initiatives in the EU and the US that envision the role of financial markets in the transition to a greener economy. In doing so, he discusses the EU Green New Deal and related EU policy initiatives and the US Commodity Futures Trading Commission's initiatives as well as Financial Stability Oversight Council's Report on Climate-related Financial Risk. He concludes the analysis by suggesting a few critical considerations on the private–public synergies and opportunities that might result from the growth of sustainable derivatives markets. He also highlights possible risks that policymakers should consider in the process of developing green derivatives markets.

Chapter 27, 'The Skin-in-the-game Bond: A Novel Sustainable Capital Instrument', examines the structure of capital instruments in promoting the transition to a sustainable economy. The authors, Katrien Antonio, Jan De Spiegeleer, Wim Schoutens and Eva Verschueren, examine the toolkit of state-of-the-art sustainable investments, such as green, social and sustainability bonds, and how the experience with these financial instruments has raised awareness about key challenges that can undermine their evolution as credible market products. In particular, the lack of punishment if the bond's issuer fails to deliver the promised sustainable results creates moral hazard as the issuer has no (skin-in-the-game) incentive to monitor the use of the proceeds for sustainable purposes. This chapter considers how the concept of a Convertible Capital Instrument (CoCo) can reduce the moral hazard problem by providing the model for a skin-in-the-game bond that is focussed on delivering the environmental, social and governance commitments. The skin-in-the-game bond is built on the principle that both issuer and investor should have skin in the game and incur costs if sustainability promises are not delivered. The chapter explains the design of several skin-in-the-game bonds, with a focus on versions with a continuous or counting benchmark. It then outlines a custom-made valuation model inspired by the credit derivatives model for CoCo bonds, and focusses on the two illustrative examples of the ESG and nuclear skin-in-the-game bonds, respectively. The authors conclude by arguing for the implementation of a sustainable debt instrument with an embedded financial penalty related to Environmental, Social and Governance commitments, and asserts that the skin-in-the-game bond provides clear incentives for the issuer to reduce excessive risk-taking, maintain a favourable benchmark value and enhance transparency for investors.

In Chapter 28, 'Financial Innovation in the Process of Financial Inclusion', Iwa Kuchciak discusses how the rapid adoption of digital technology in finance offers a large potential to increase financial inclusion as banks and non-banks have begun to offer digital financial services for financially excluded and underserved populations. This chapter analyses the challenges, problems and opportunities arising from the processes of digitalisation of financial services from a social and economic point of view. In doing so, it explores the concepts of financial inclusion, exclusion and digital financial inclusion. It discusses the importance of financial inclusion as a potential source of benefits to the economy in two broad ways: first, access to affordable credit reduces the vulnerability of the poor; and second, access to deposit and insurance products facilitates direct funding on the financial markets. The author then discusses the legal and regulatory framework at the international level and examines national financial strategies, including the engagement of the private sector and civil society in the process of developing a national strategy. She then discusses the digitalisation of financial services focussing on the development of mobile financial services, and argues that the improvement of financial inclusion was largely driven by financial technology (Fintech) innovations. She then analyses the impact of the COVID-19 pandemic on accelerating access to digital financial services as well as the importance of financial education in building financial resilience. Finally, she explores the importance of promoting digital and financial literacy.

In Chapter 29, 'Sustainable Finance and Fintech: A Focus on Capital Raising', Eugenia Macchiavello discusses how the EU has shown interest in exploring the synergies between digital finance and sustainable development, recognising the opportunities of using digital finance to promote sustainable development. Before that, international organisations such as the United Nations Environmental Programme had developed programmes to facilitate digital finance in promoting sustainable development and providing more capital to fill the funding gap to achieve the Sustainable Development Goals (SDGs). However, sustainable digital finance also presents several risks from the perspective of financial regulation and sustainability. Thus, this chapter aims to assess the benefits, risks and legal implications of each sustainable digital finance application, focussing on capital raising for small and medium-sized enterprises (SMEs). In doing so, it discusses the opportunities, characteristics and examples of crowdfunding from the perspective of sustainability, and explores the special risks and legal challenges of green crowdfunding by examining the European Crowdfunding Service Providers Regulation. The author then discusses the sustainability of distributed-ledger technology-based (DLT) finance by examining the potential of capital raising from the DLT ecosystem. She provides examples of some of the main applications, and the main risks and regulatory issues. She also analyses the EU responses to DLT-based green financing by reviewing the Regulation on Markets in Crypto-Assets (MiCAR) and other EU legislation. She concludes that opportunities and risks of sustainable digital finance should be taken into account before supporting the widespread adoption of certain instruments in sustainable finance.