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Volker Brühl

Green Finance in Europe – Strategy, Regulation and Instruments

The publication of the 6th assessment report by the Intergovernmental Panel on Climate Change (IPCC, 2021) on 9 August was another wake-up call for policymakers around the world that there is an urgent need for action to fight climate change. The report delivers once more the scientific evidence that global warming of the atmosphere, oceans and land is caused, to a large extent, by human activities. The observed acceleration of climate change increases the pressure to implement greenhouse gas (GHG) reduction measures on a global scale.

A green transformation of nearly all parts of our economy is necessary, including but not limited to energy production and consumption, mobility, manufacturing and agriculture. The enormous investment volume required is very hard to quantify due to the global, multisectoral nature of the problem and the lack of reliable data. Nevertheless, estimates of the investments required to achieve the low-carbon transition range from US \$1.6 trillion to US \$3.8 trillion annually between 2016 and 2050, for supply-side energy system investments alone (IPCC, 2018, 154). Although climate finance

has reached record levels, funding still falls far short of what is needed under a 1.5°C scenario (Buchner et al., 2019). Of the global climate finance volume of US \$579 billion (two-year average 2017/2018), about US \$326 billion was provided by the private sector and US \$253 billion by the public sector. In light of this, the financial sector plays an important role for a successful sustainable transformation of the global economy.

The European Green Deal stipulates that the EU will become climate-neutral by 2050 (European Commission, 2019). The intended transformation of the EU will require enormous investments from both the public and the private sector. The EU estimates that approximately €350 billion of additional investment is required in the energy system alone each year up to 2030 in order to meet the 55% emission reduction target (European Commission, 2021b).

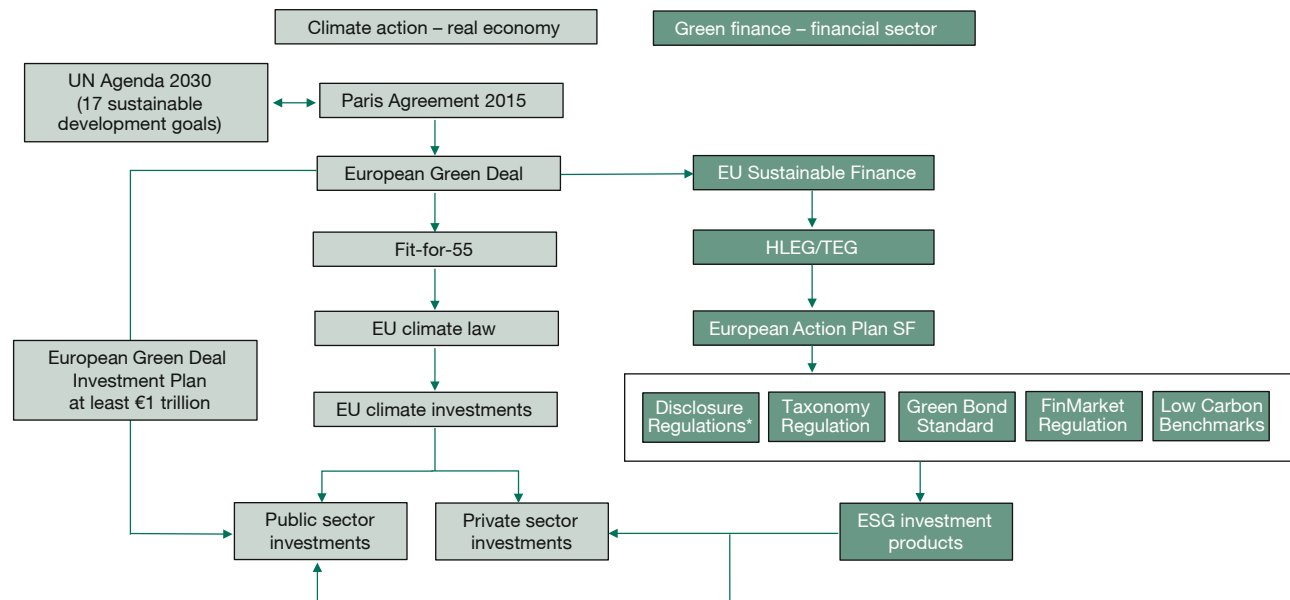
To finance the Green Deal, the EU Commission has announced that a total of €1 trillion will be invested in the green transformation of the European economy. The funds will be generated, inter alia, under the 2021-2027 Multiannual Fi-

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Figure 1

The interaction between climate protection and green finance in the EU

Notes: SF = Sustainable Finance, HLEG = High-level Expert Group, TEG = Technical Expert Group, *Sustainable Finance Disclosure Regulation, Non-Financial Disclosure Regulation, Corporate Sustainability Reporting Directive.

Source: Author's own illustration.

financial Framework (MFF) and Next Generation EU fund with a total volume of €750 billion. Although this is a large sum, a huge gap of at least €2.5 trillion remains to be financed predominantly by the private sector, for which appropriate regulatory framework conditions and incentives are needed to further promote environmental, social, governance (ESG) investments.

This article illustrates the interdependence between the various climate protection programmes and the sustainable finance activities established so far in the European Union. Key regulatory initiatives such as the Taxonomy Regulation as well as disclosure frameworks and other aspects of financial market regulation are explained in the context of the European Sustainable Finance Strategy. Finally, some missing elements that could help to further mobilise capital to finance the European Green Deal are discussed.

The EU's Sustainable Finance Strategy

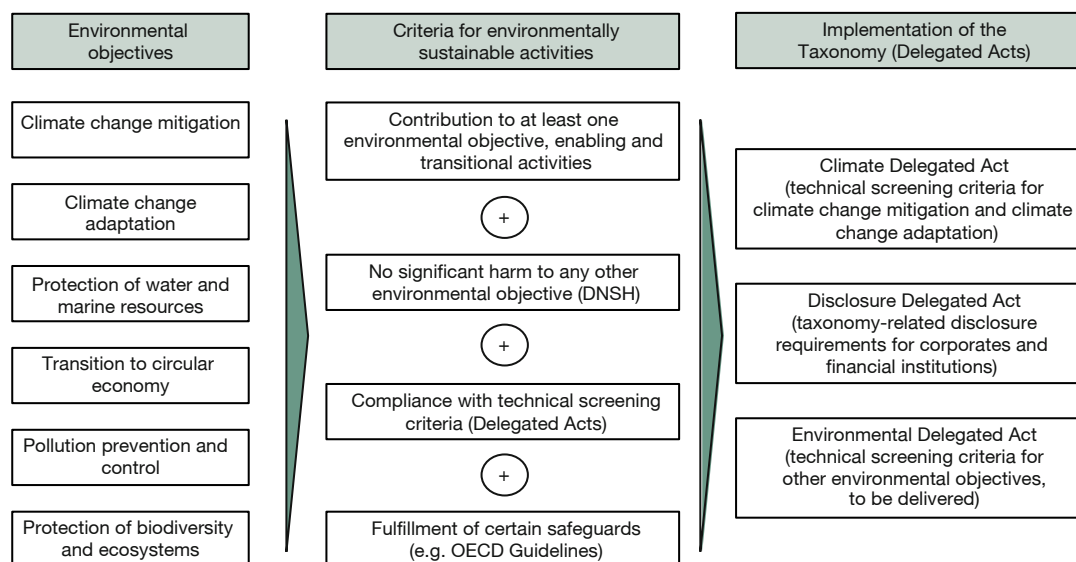
In light of the critical role of the financial sector for providing sufficient capital, sustainable finance is receiving more attention in both academic research and the financial sector. Leading asset managers and investment firms offer ESG financial products that claim to take sustainability factors into account throughout the entire investment process. However, while they are often used interchangeably, one needs

to differentiate precisely between sustainable finance and green finance or climate finance.

Sustainable finance refers to the process of taking ESG considerations into account when making investment decisions in the financial sector. Environmental considerations might include climate change mitigation and adaptation as well as the preservation of biodiversity, pollution prevention and the circular economy (European Commission, 2021e; Berrou et al., 2019).

Within the context of sustainability, there are manifold ways of defining green finance (European Commission, 2017). For the purpose of this paper, we define green finance as the financing of investments that provide environmental benefits such as reductions in air, water and land pollution, reductions in GHG emissions, improved energy efficiency and mitigation of and adaptation to climate change. This definition is in line with the Taxonomy Regulation and the targets of the European Green Deal and is also close to the definition provided by the G20 Green Finance Study Group (2016), as we understand green finance as a subset of sustainable finance. In that context, climate finance refers to the financing of public and private investments that seek to support mitigation of and adaptation to climate change and can therefore be considered as a subset of green finance (Hong et al., 2020).

Figure 2
Cornerstones of the Taxonomy Regulation



Source: Author's own illustration.

Figure 1 illustrates the development of and interdependencies between the climate protection initiatives in the EU and the corresponding key elements of the European Sustainable Finance Strategy to ensure that the required green financing can be generated. The EU Commission has established a High-level Expert Group on Sustainable Finance, which presented its final report in 2018 and subsequently a Technical Expert Group (2020) that has elaborated detailed recommendations on certain aspects. These recommendations form the basis of the European Action Plan on Sustainable Finance (European Commission, 2018), which has been refined through the Renewed Sustainable Finance Strategy (European Commission, 2021a) and the April package presented earlier this year (European Commission, 2021d).

Establishing an EU taxonomy for sustainable activities

A precise classification system is needed to exactly define the criteria that have to be fulfilled by sustainable or green investment products. Such a taxonomy should support investor decisions, avoid greenwashing and help to channel capital flows into sustainable investments. The Taxonomy Regulation (Regulation (EU) 2020/852 on the Establishment of a Framework to Facilitate Sustainable Investments) came into force on 12 July 2020, but many details are established through Delegated Acts.

As shown in Figure 2, the Taxonomy Regulation distinguishes six environmental objectives by which economic activities can be classified as sustainable. Firstly, climate change mitigation covers activities that contribute to a reduction of greenhouse gas emissions in line with the goals of the Paris Agreement, e.g. through greater use of renewable energies. Secondly, climate change adaptation refers to activities that substantially reduce the adverse impacts of current and expected future climate change on people or nature (e.g. reforestation). The other environmental objectives set out in the Taxonomy Regulation concern the sustainable use and protection of water and marine resources, the transition to a circular economy, the prevention of pollution and the protection of biodiversity and ecosystems.

For an economic activity to qualify as sustainable, it needs to make a substantial contribution to at least one of the defined environmental objectives while at the same time doing no significant harm (DNSH) to any of the other objectives. Furthermore, detailed technical screening criteria (defined by Delegated Acts) need to be fulfilled in order to ensure that a measurable positive impact on the respective target is achieved. Finally, minimum requirements on responsible management (e.g. OECD Guidelines on Multinational Enterprises and the UN Guiding Principles on Business and Human Rights) have to be met by the respective market participants.

According to the Taxonomy Regulation, three types of economic activity can be classified as sustainable: activities that directly contribute to the defined sustainability goals, enabling activities that facilitate the achievement of such goals by providing technologies or services and transitional activities that support the transition to a CO₂-neutral economy as long as technological alternatives are not available. The Taxonomy Regulation applies from 1 January 2022 for the objectives climate change mitigation and climate change adaptation and for the other environmental objectives from 1 January 2023 onwards.

The first Delegated Act has established the technical screening criteria for activities that substantially contribute to climate change mitigation or climate change adaptation (C(2021) 2800 final, the Climate Delegated Act, see Figure 2). It will apply from 1 January 2022 and will cover sectors that are responsible for almost 80% of direct GHG emissions in Europe. It includes sectors such as energy, forestry, manufacturing, transport and buildings. The Delegated Act on the remaining four environmental objectives (the Environmental Delegated Act) must be adopted by the Commission by 31 December 2021 and shall apply as of 1 January 2023.

The taxonomy is a pivotal element of the European Sustainable Finance Strategy as it affects the disclosure regulation of both financial institutions and corporates as well as the Green Bond Standard. In light of the granularity and the preciseness of definitions for sustainable activities and the technical criteria to be met, the EU taxonomy is by far the most advanced compared to other alternatives in the market (OECD, 2020).

The second pillar of a sustainable finance strategy refers to the disclosure requirements of financial institutions and corporates that enable investors to make informed investment decisions and to provide other stakeholders with sustainability-related information. We can already observe that portfolio managers from large asset management firms and investment funds are challenging the boards of listed companies regarding sustainability issues, especially as the demand for ESG investment products has been increasing in recent years. According to a recent survey (Blackrock, 2020), many investors are planning to double their sustainable assets under management in the next five years with the “environmental factor” clearly seen as the top priority for most investors (88%). However, 53% of participating investors mentioned that the poor quality of ESG data so far is one of the biggest barriers to larger ESG investments. Therefore, a proper regulatory framework for non-financial reporting of both corporates and financial institutions is important in terms of turning the increasing investor appetite into actual investment decisions. Hence the Sustainable Finance Disclosure Regulation, the Non-Financial Reporting Directive and the new Corpo-

rate Sustainability Reporting Directive are important components of a successful sustainable finance ecosystem.

The Sustainable Finance Disclosure Regulation

The Sustainable Finance Disclosure Regulation (SFDR), which in general applies as of 10 March 2021, imposes mandatory ESG disclosure obligations for asset managers and other financial market participants (Regulation (EU) 2019/2088). The SFDR is a directly applicable regulation extending the already existing disclosure requirements of financial market participants according to relevant sectoral legislation (AIFMD, UCITS, Solvency II, IDD and MiFID II). The SFDR requires asset managers and financial advisors to disclose how they consider sustainability risks in their investment process. Furthermore, they have to disclose principal adverse impacts (PAIs) on sustainability factors that an investment decision or advice might have. The regulation sets forth sustainability disclosure obligations for financial products and financial advisers both on an entity and product level. At the entity level, the SFDR requires firms to disclose information on how an entity integrates sustainability risks in its investment decision-making process or financial advice. At the product level, the SFDR requires firms to disclose further information depending on the objectives of a given financial product. This applies to all the firm's products, whether they are intended to meet sustainability goals or not. For products that promote environmental or social characteristics, there must be additional information on how these are met, including disclosure on the degree of taxonomy alignment of underlying economic activities (Article 8 products). For products that have sustainable investment as an objective, there must be an explanation of how the objective is achieved as well as additional disclosure on alignment with the Taxonomy Regulation (Article 9 products). While the requirements in the SFDR relating to the entity-level disclosure apply from 10 March 2021 on a comply or explain basis, the additional detailed entity and product level disclosures apply from 1 January 2022.

Based on Article 8 of the Taxonomy Regulation, the Disclosures Delegated Act (C(2021) 4987 final) specifies the content, methodology and presentation of information to be disclosed by large financial and non-financial companies on the share of their business, investment or lending activities that are aligned with the EU taxonomy. This applies to certain large institutions that are required to publish non-financial information under the Non-Financial Reporting Directive (NFRD). If the NFRD were to be amended by the proposed Corporate Sustainability Reporting Directive, the scope of institutions covered by Article 8 of the Taxonomy Regulation would be expanded. The Taxonomy Regulation specifies the key performance indicators (KPIs) related to turnover, capital expenditures and operational expenditures that non-finan-

cial companies have to disclose. The Disclosures Delegated Act provides precise definitions, calculation methods and reporting requirements for each KPI. However, the Taxonomy Regulation does not define similar indicators for financial institutions, as meaningful KPIs depend largely on the underlying business model.

Therefore, the Disclosures Delegated Act sets forth specific sustainability-related KPIs for banks, asset managers, investment firms, insurance and reinsurance firms in order to enable investors and other stakeholders to assess the proportion of taxonomy-aligned economic activities performed by the respective financial institution. Asset managers and investment firms should therefore disclose the proportion of investments they have made in taxonomy-aligned economic activities resulting from both their collective and individual portfolio management activities. The main performance indicator for credit institutions will be the green asset ratio, which shows the proportion of exposures related to taxonomy-aligned activities compared to the total assets. Furthermore, banks have to disclose the allocation of their trading book and the proportion of their fees and commission income derived from taxonomy-aligned activities of their clients. Similar obligations apply to insurance and reinsurance companies, for example to disclose the taxonomy-aligned proportion of their underwriting and investment activities.

Due to the extensive additional reporting requirements, financial and non-financial firms have to implement them gradually. From 1 January 2022 to 31 December 2022, non-financial firms will only disclose the proportion of taxonomy-aligned economic activities in their total turnover, capital and operational expenditure supplemented by some additional qualitative information relevant to this disclosure. More granular information may be disclosed from 1 January 2023. In a similar way, financial institutions have to disclose the taxonomy-aligned proportion of their business from 1 January 2022 to 31 December 2023. More detailed disclosure obligations apply from 1 January 2024 or, for some parts, from 1 January 2026.

Non-Financial Reporting Directive

The SFDR and the Taxonomy Regulation, including their Delegated Acts, have to be viewed in conjunction with the already established non-financial reporting requirements. Since 2017, larger capital market-oriented European companies and financial institutions have been obliged to report certain non-financial aspects of their business activities. The Non-Financial Reporting Directive (NFRD, Directive 2014/95/EU) has established rules for the disclosure of non-financial information for certain large companies in order to enhance their transparency on sustainability-related issues. Capital market-oriented companies, banks, insurance companies

and other larger non-listed firms with more than 500 employees have to report in particular on matters regarding the environment, employees, respect of human rights and anti-corruption issues. Companies have to disclose the impact of their business activities on such matters and how they work towards achieving non-financial targets in each of these areas. Furthermore, the risks imposed by the company's business on the environment as well as the risks the company is exposed to are important reporting areas. Many companies use guidelines provided by the Global Reporting Initiative and the recommendations from the UN Global Compact. The Commission has published legally non-binding guidelines to help companies implement the disclosure requirements in a clear, consistent and comparable way both for climate-related information (C(2019) 4490 final) that are broadly in line with the recommendations of the Task Force on Climate-related Financial Disclosures (FSB, 2017) and for other non-financial aspects (C(2017) 4234 final).

Corporate Sustainability Reporting Directive

There has been criticism that only a small proportion of firms need to comply with NFRD requirements and that the disclosed information is often not relevant or detailed enough for investors to integrate sustainability information into their investment process (e.g. Umweltbundesamt, 2021). On 21 April 2021, the Commission adopted a proposal for a Corporate Sustainability Reporting Directive (COM(2021) 189 final), which will extend the scope of sustainability reporting to all larger companies. Furthermore, it is intended to broaden and deepen the content of sustainability reporting, which will be harmonised and aligned with the requirements set out in the Taxonomy Regulation and the SFDR. The structure, content and format of sustainability reporting will be standardised and more detailed to facilitate comparability and external assessment of sustainability risks. As the reported information will be part of the management report, at least a limited assurance (audit) by a third party will be mandatory. The draft standards will be developed by the European Financial Reporting Advisory Group based on the work of established initiatives such as the Global Reporting Initiative, the Sustainability Accounting Standards Board, the International Integrated Reporting Council or the Climate Disclosure Standards Board. If the legislation is finalised in the first half of 2022, the new set of reporting standards for companies could apply to reports published in 2024, covering financial year 2023.

Standards and labels for green financial products

The aforementioned regulatory initiatives to improve the disclosure of sustainability information pave the way for building the bridge between business activities in the "real economy" and products/services in the financial sector. The develop-

ment of standards for “green” financial products can support the further development of ESG-oriented financial market segments by helping investors to identify products that comply with low-carbon criteria, for instance. If investor confidence in the credibility of such standards increases over time, barriers to investments and transaction costs could be reduced. In order to credibly fight greenwashing, strict supervision of the asset management industry by the responsible authorities is vital to ensure that green product features and reporting requirements are constantly fulfilled. An important example is the European Green Bond Standard, which is a first step towards a broader spectrum of green financial products (European Commission, 2021f). The project to create an EU Ecolabel for Retail Financial Products could especially facilitate sustainable investment decisions for retail investors (European Commission, 2021c).

The European Green Bond Standard

The market for green bonds continues to experience strong growth, especially over the last five years, with an estimated total issue volume of US \$270 billion, representing a compound annual growth rate of 60% since 2015 (Jones, 2021). In order to avoid greenwashing, several market standards have been established, of which the Green Bonds Principles formulated by the International Capital Market Association have so far been widely used in Europe. However, rather than a precise classification scheme, these guidelines provide more of an exemplary list of green activities suitable for financing via green bonds.

Hence the European Green Bond Standard (COM (2021) 391 final) is supposed to create a voluntary European high-quality standard available to all issuers (private and sovereign within or outside the EU) to help finance sustainable investments. To overcome the weaknesses of existing market labels, bonds that qualify as green according to European standards have to fulfil, *inter alia*, the following criteria: The funds raised by the bond have to be fully allocated to economic activities that are sustainable according to the Taxonomy Regulation. In addition, the use of the funds has to be reported annually by the issuer in a European Green Bond Allocation Report. Compliance with the standards has to be monitored by external reviewers that are registered and supervised by the European Securities and Markets Authority. External reviewers shall publish pre-issuance reviews and post-issuance reviews of the use of proceeds. Furthermore, a European Green Bond Impact Report on the positive and potentially negative environmental effects of the activities has to be prepared at least once during the maturity of the bond. These strict criteria are designed to foster market integrity by avoiding greenwashing, enhancing investor confidence and issuer transparency.

EU Low Carbon Benchmarks Regulation

Benchmarks perform an important role in financial markets, as they serve as a reference point for pricing financial instruments and transactions, e.g. in credit markets, equity and debt capital markets and derivative markets in various asset classes. Benchmarks are also used to measure the performance of financial instruments and determine the financial obligations arising from financial contracts. Therefore, a high level of transparency and quality regarding the underlying methodologies and data are crucial for benchmarks to function efficiently. In the EU, the Benchmarks Regulation that has been applicable since 1 January 2018 (Regulation (EU) 2016/1011) provides the regulatory framework for benchmark administrators. The regulation requires the publication of benchmark statements to help users understand the benchmark’s field of application and calculation method as well as the reliability of input data and its susceptibility to manipulation. Furthermore, appropriate governance and control processes need to be implemented to avoid conflicts of interest and to ensure the protection of consumers and investors. As many institutional and retail investors invest in benchmark portfolios, it is important to establish regulated sustainable investment benchmarks to attract further capital flows to green investments.

On 27 November 2019, the Benchmarks Regulation was amended to introduce EU Climate Transition Benchmarks, EU Paris-aligned Benchmarks and sustainability-related disclosures for benchmarks (Regulation (EU) 2019/2089), which entered into force on 10 December 2019. The Delegated Regulations ((EU) 2020/1816 and (EU) 2020/1817) for ESG disclosure came into effect on 23 December 2020. The introduction of such benchmarks is supposed to facilitate investments into diversified ESG portfolios with assets from issuers committed to a pathway of decarbonisation by enhancing transparency and comparability.

An EU Climate Transition Benchmark is a benchmark where the underlying assets are selected, weighted or excluded in such a manner that the resulting benchmark portfolio is on a decarbonisation trajectory. An EU Paris-aligned Benchmark denotes a benchmark portfolio whose carbon emissions are aligned with the objectives of the Paris Agreement without doing significant harm to other ESG objectives. To that end, a decarbonisation trajectory means a measurable, science-based and time-bound trajectory towards alignment with the objectives of the Paris Agreement. It should be noted that decarbonisation entails carbon emissions directly generated from the respective entity (scope 1), emissions from the consumption of purchased electricity, steam, or other sources of energy (scope 2) and all indirect emissions that occur along the value chain of the reporting company (scope 3).

Administrators of such low carbon benchmarks have to disclose the calculation method of the respective benchmark as well as the methodology for selecting, weighting and excluding the underlying assets. Moreover, it must be disclosed how the carbon emissions of the underlying assets were measured, their respective values, the total carbon footprint of the benchmark and the type and source of the data used. Administrators of ESG benchmarks have to provide in their benchmark statements detailed information about whether and how ESG factors are reflected in each benchmark. In addition, the Delegated Regulations prescribe the use of specific disclosure templates to ensure standardised formats and facilitate comparability for investors. It includes a forward-looking, year-on-year decarbonisation trajectory and the degree to which the IPCC decarbonisation trajectory (1.5°C with no or limited overshoot) has been achieved on average per year since creation.

Amendments to financial market regulations

On 21 April 2021, several amendments to financial market regulations were adopted (the April package) in order to ensure that client preferences for sustainable investment products are discussed by investment advisors, to clarify the obligations of financial firms when assessing sustainability risks of investments and the need to consider sustainability factors when designing financial products. These measures are expected to help prevent greenwashing of financial products. Therefore, important financial market regulations have been amended, such as the Undertakings for Collective Investment in Transferable Securities Directive, the Alternative Investment Management Directive, the Insurance Distribution Directive, Solvency II and the MiFID II. These changes are expected to come into force by October 2022 (European Commission, 2021d).

Additional instruments

The EU's Sustainable Finance Strategy has significantly improved the regulatory framework for ESG financial products by establishing a precise taxonomy, enhancing transparency for both corporate and financial institutions and amending financial market regulations. However, in light of the apparent necessity to accelerate the implementation of the European Green Deal, additional financial incentives to foster green investments should be discussed. One aspect could be the establishment of tax incentives for green investments in the corporate sector. These could be provided by, for example, allowing accelerated depreciation schedules for green capital expenditures in the industrial sector.

Another component in efforts to align business activities more effectively with climate protection targets could be to require that the remuneration of top management be linked

to concrete reduction targets for GHG emissions. Although ESG criteria already play a role in the remuneration of board members at a number of larger, predominantly publicly listed, companies, target-setting is often very vague, only of qualitative nature and of minor overall importance compared to KPIs measuring the financial performance of a company. Therefore, a rebalancing of the relative importance of financial and non-financial targets should be considered, with the latter having a clear focus on environmental objectives. One possibility could be to use the technical screening criteria of the taxonomy to clearly define targets and corresponding metrics to measure the environmental performance of the management.

A highly controversial element concerns the introduction of a "green supporting factor" into banking regulations so that banks do not have to commit as much capital when granting green loans. Promoters of such an initiative hope that bank lending would contribute more than before to accelerating the transition to a climate-neutral economy. Consequently, green loans would be treated as less risky than more carbon-intensive "brown" loans, which could ultimately lead to reduced financing costs for green investments. However, such a green supporting factor would essentially imply a departure from the fundamentally risk-based regulation of capital requirements for banks and other financial institutions that was established in the aftermath of the financial crisis.

Over the last ten years various regulatory initiatives have contributed to a much more robust and resilient financial sector, and this progress should not be put in jeopardy. Nevertheless, it would be beneficial to learn more about the impact of climate risk on the default risk of companies from different sectors and geographies and how to integrate climate risk into current models that measure credit, market and operational risks. So far there is no empirical evidence that green exposures are less risky than others. In addition, it is questionable whether such a green supporting factor would have a substantial impact on banks' lending decisions (Dankert et al., 2018).

The idea of a "green branding" could be applied not only to bonds but also to other financial products such as stocks, loans or asset-backed securities. Finally, the integration of ESG factors into the architecture of major stock-market benchmarks should also be considered (Brühl, 2020).

References

- Berrou, R., P. Dessertine and M. Migliorelli (2019), An Overview of Green Finance, in M. Migliorelli and P. Dessertine (eds.), *The Rise of Green Finance in Europe*, Palgrave Studies in Impact Finance, Palgrave Macmillan.
- Blackrock (2020), Sustainability goes mainstream, 2020 Global Sustainable Investing Survey.

- Brühl, V. (2020), Mehr Nachhaltigkeit im deutschen Leitindex DAX, *Wirtschaftsdienst*, 100(12), 952-957, <https://www.wirtschaftsdienst.eu/inhalt/jahr/2020/heft/12/beitrag/mehr-nachhaltigkeit-im-deutschen-leitindex-dax.html> (18 October 2021).
- Buchner, B., A. Clark, A. Falconer, R. Macquarie, C. Meattle, R. Tolentino and C. Wetherbee (2019), *Global Landscape of Climate Finance 2019*, Climate Policy Initiative.
- Dankert, J., L. van Doorn, H. Reinders and O. Sleijpen (2018), A Green Supporting Factor — The Right Policy?, *SUERF Policy Notes*, 43.
- European Commission (2017), Defining “green” in the context of green finance, Final report.
- European Commission (2018), Communication from the Commission to the European Parliament, the Council, The European Economic and Social Committee and the Committee of the Regions, Action Plan: Financing Sustainable Growth, COM(2018) 97 final.
- European Commission (2019), The European Green Deal, COM(2019) 640 final.
- European Commission (2021a, 6 July), Commission puts forward new strategy to make the EU’s financial system more sustainable and proposes new European Green Bond Standard, Press release.
- European Commission (2021b), Communication from the Commission to the European Parliament, the Council, The European Economic and Social Committee and the Committee of the Regions, Strategy for Financing the Transition to a Sustainable Economy, COM(2021) 390 final.
- European Commission (2021c), Development of EU Ecolabel criteria for Retail Financial Products, Technical Report 4.0: Draft proposal for the product scope and criteria.
- European Commission (2021d), EU Sustainable Finance, April package.
- European Commission (2021e), Overview of sustainable finance, https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance_en (23 July 2021).
- European Commission (2021f), Proposal for a Regulation of the European Parliament and of the Council on European green bonds, COM(2021) 391 final.
- Financial Stability Board (FSB, 2017), Recommendations of the Task Force on Climate-related Financial Disclosures, Final report.
- G20 Green Finance Study Group (2016), Green Finance Synthesis Report.
- High-Level Expert Group on Sustainable Finance (2018), Financing a sustainable European Economy, Final Report.
- Hong, H., A. Karolyi and J. A. Scheinkman (2020), Climate Finance, *The Review of Financial Studies*, 33(3), 1011-1023.
- Intergovernmental Panel on Climate Change (IPCC, 2018), Global Warming of 1.5° C, Special Report.
- Intergovernmental Panel on Climate Change (IPCC, 2021), Climate Change 2021: The Physical Science Basis, Contribution of Working Group I to the Sixth Assessment Report.
- Jones, L. (2021, 24 January), Record \$269.5bn green issuance for 2020, *Climate Bonds Initiative Blog*.
- OECD (2020), *Developing Sustainable Finance Definitions and Taxonomies*, Green Finance and Investment, OECD Publishing.
- Technical Expert Group (2020), Taxonomy: Final report.
- Umweltbundesamt (2021), *Klima- und Umweltberichterstattung deutscher Unternehmen*, Dessau-Roßlau.