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CHAPTER 9

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9.1 Addressing ESG Risks by Banks

The focus of this chapter[1] is on the creation and application of European and national laws and regulations for risk management, capital requirements and liquidity management by 'credit institutions' related to Environmental, Social and Governance (ESG) risks. Hereinafter, we will refer to these institutions as 'banks,' with an establishment within the

[1] This chapter produces a complete rewrite of the subject matter of prudential requirements for banks of ESG Risks and replaces Chapter 9 *Which Role for the Prudential Supervision of Banks in Sustainable Finance?* written by Antonio Luca Riso in the previous edition of this book *Sustainable Finance in Europe; Corporate Governance,*

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European Union. More precisely, we start from the definition of these businesses as expressed in Article 4(1)(1)(a) of the Capital Requirements Regulation[2] (hereinafter CRR).

There is a certain ambivalence in labelling this chapter referring to the broader term 'ESG,' when in fact much of the issues discussed in this chapter is about the treatment of climate-related and environmental risks. When dealing with the subject matter in this chapter, account must be taken of the fact that it can be observed that political decision-making and development of legislation has recently led to a broadening of the scope to include social aspects in policies. For example, in the amendments to banking legislation to be discussed below (what we will hereafter call CRR3 and CRD6), there will be a very broadly written set of definitions that aim to cover the broad ESG field, and the relevant rules are not restricted to addressing climate and environmental risks only. In this chapter, we aim to deal precisely with the subject matter by using the term ESG wherever policy rules also have such a broader interpretation,

Financial Stability and Financial Markets, editors: Danny Busch, Guido Ferrarini, Seraina Grünewald, Palgrave Macmillan (2021). I am indebted to Riso for his thorough and rich views expressed in that chapter and will, where relevant, process references to it in this newly written contribution. The author wishes to account for the fact that parts of Sect. 9.1 and significant parts of Sect. 9.2 of this chapter on Qualitative Capital Requirements for Banks to address ESG Risks have been based on his Dutch language contribution to the publication 'Duurzaam Bankieren,' published by Radboud University Onderzoeksinstituut Onderneming & Recht (OOR) in 2023. The Dutch language text of that publication as closed in April 2023 has been translated to English using the DeepL Pro translation engine but, subsequently for the purpose of preparing the text for this chapter, significantly updated with the latest status on the trilogue negotiations on the Banking Package 2021 and further recent developments. The manuscript has been closed on 21 November 2023.

[2] Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012, *OJEU* 2013 L 176, pp. 1–337 as last amended by Regulation (EU) 2022/2036 of the European Parliament and of the Council of 19 October 2022 amending Regulation (EU) No 575/2013 and Directive 2014/59/EU as regards the prudential treatment of global systemically important institutions with multiple-point-of-entry settlement strategies and methods of indirect placement of instruments eligible for 575/2013 and Directive 2014/59/EU as regards the prudential treatment of globally systemically important institutions with a multiple-point-of-entry settlement strategy and methods of indirect placement of instruments eligible for compliance with the minimum requirement for own funds and eligible liabilities, *OJEU* 2022 L 275, pp. 1–10.

and we then retain the term climate and environmental risks for the parts of policy and regulation that focus exclusively on them.

From the beginning of the unfolding of the European Commission's policy in '*Action plan: financing sustainable growth*' of 2018[3] (Action Plan 2018), its subsequent iterations in '*Strategy for financing the transition to a sustainable economy*' of 2021[4] (Strategy 2021) and the most recent recalibration of policy objectives in '*A sustainable finance framework that works on the ground*' of June 2023[5] (Strategy 2023), banks have been positioned as key participants in achieving the policy objectives. In many cases, this emphasises disclosure of information on the climate impact of banks' business activities, and in some cases, banks are also expected to disclose information on how businesses prepare and implement transition plans.

The Commission's ambitions thus featured prominently in the 2018 Action Plan and its subsequent recalibration in the 2021 Strategy and the 2023 Strategy. Banks have an important role to play, according to the European institutions, in the intermediation process to achieve these sustainable financing efforts. There is no doubt that this has major implications for the development of banks' products and services.[6] But there is just as much awareness that this transition to a more sustainable economy may lead to increased risks that banks face, and to increased risks for the stability of the financial system as a whole.

Initially, the Commission's philosophy here was to encourage banks to be transparent about that impact and transition plans, but it did not opt for further guidance in this respect. Certainly, until the new rules that will be introduced with the CRD6 proposal to be discussed below, there

[3] Communication from the Commission of 8 March 2018 to the European Parliament, the European Council, the Council, the European Central Bank, the European Economic and Social Committee and the Committee of the Regions, *Action Plan: Financing sustainable growth*, COM(2018) 97 Final.

[4] Communication from the Commission of 6 July 2021 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.

[5] Communication from the Commission of 13 June 2023 to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *A sustainable finance framework that works on the ground*, COM(2023) 317 Final.

[6] See: Riso, ibid., p. 276.

is concrete guidance for banks in terms of their qualitative risk management organisation. Further guidance could require banks to consider in their client-acceptance policy the impact of their (target) clients on the climate objectives. It could also require banks to attach consequences to that impact and force them not to accept certain clients or part ways with them.

Further steering could also include tying legally binding requirements to the prudential rules applicable to banks, for instance, by imposing higher capital or liquidity requirements for exposures that are considered to be particularly troublesome in respect of the achievement of the sustainable finance objectives, or even clearly having an enhanced impact on pollution.[7] Another form of steering could be for banks to be granted exemptions, or be subjected to lighter requirements in this area, if they take into account the achievement of climate objectives by themselves or by the relevant customers when accepting customers or offering products or services. The latter, for example, in the form of so-called 'green support factors.'[8] Whilst policymakers originally encouraged the financial sector mainly to contribute to shifting funding flows towards more sustainable financing, there is an increasing focus on the outside-in risks of climate change amongst those financial institutions themselves. In doing so, these new rules have been or will be introduced in the near future at various levels that require banks, when offering products and services and when maintaining their business relationships with clients, to account for whether these products or services or the business relationship represent a particular risk from the perspective of climate change, and consider the adverse effects that could result in a financial-economic sense. The new rules of prudential supervision thereby focus both on qualitative risk management and the impact for quantitative requirements, e.g., those on capital requirements.

In terms of qualitative requirements, the rules focus on the strategic and operational risk analysis that banks should undertake to assess the

[7] Riso refers to this as the 'dirty penalising factor,' DPF, ibid., p. 288.

[8] Riso, ibid., p. 288, Dirk Schoenmakers and Arnoud Boot, *Climate change adds to risk for banks, but EU lending proposals will do more harm than good*, Bruegel Blog Post, 16 January 2018 www.bruegel.org/blog-post/climate-change-adds-risk-banks-eu-lending-proposals-will-do-more-harm-good and Jens-Hinrich Binder, *Prudential requirements framework and sustainability*, working paper, latest published version dated 14 November 2022, EBI Working Paper Series 2022-No. 131. See www.ebi-europa.eu.

degree of risks of climate change, and once those risks have been identified, take appropriate risk management actions. The rules on qualitative risk management are therefore addressing the internal policies and procedures of banks to address risks, to define the risk appetite of banks and to take measures and mitigating actions in respect of such risks.

The premise of the current thinking of the authorities is that ESG risks provide a subset of the risks that are encompassed in the strategic risk framework that banks maintain. This framework is based on the three main risk categories that are part of the existing risk management rules: credit risk, market risk and operational risk. Climate risks should then be fitted into those risk categories.

In the area of qualitative risk management, based on soft law instruments applied by the competent authorities (for instance, the ECB Guide on climate-related and environmental risks[9]), steering banks to changing risk management practices, particularly in respect of climate change and environmental related risks, has already commenced and additional rules with an expanded ESG risk definition will soon apply, following the so-called 'Banking Package 2021'. That package of legislative measures aims, amongst other things, to adapt and supplement the provisions of the CRR

[9] ECB *Guide on climate-related and environmental risks; Supervisory expectations relating to risk management and disclosure*, November 2020 to be consulted at www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.202011.

to accomplish the CRR3[10] as well as those of the current text of the Capital Requirements Directive[11] (CRD4) to accomplish the CRD6.[12]

When it comes to quantitative capital requirements, the requirements that should increase banks' resilience following the assessment of financial-economic losses related to climate change, developments are still in their infancy. Some important studies on this have now been published, and in this chapter, we will focus, in particular, on the work of The Network for Greening the Financial System (NGFS) and the European Banking Authority (EBA). Similarly, the current frameworks for liquidity management by banks are being evaluated to assess whether or not supplemental rules are required to be adopted, but such assessment process is still in its early stages.

In the next section, we first address qualitative risk management. In Sect. 9.3, we will discuss the so-called quantitative capital requirements for banks to address ESG risks, including the initial thoughts on introducing a green support factor relief for capital requirements when banks are financing or investing in sustainable projects.

[10] Footnote 2 lists the first amending regulation that was part of the 2021 Banking Package and has been prioritised in the legislative process. The second amending regulation whose trialogue negotiations are currently pending and which should be adopted by the legislators during 2023 concerns the European Commission's proposal of 27 October 2021 for a Regulation of the European Parliament and of the Council amending Regulation (EU) No 575/2013 as regards credit risk requirements, credit valuation adjustment risk, operational risk, market risk and output floor COM/2021/664 Final.

[11] Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on the access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC, *OJEU* 2013 L 176, pp. 338–436 as last amended by Directive (EU) 2021/338 of the European Parliament and of the Council of 16 February 2021 amending Directive 2014/65/EU as regards information requirements, product governance and position limits, and Directives 2013/36/EU and (EU) 2019/878 as regards their application to investment firms, to contribute to the recovery from the COVID-19 crisis, *OJEU* 2021 L 68, pp. 14–28.

[12] European Commission proposal of 27 October 2021 for a Directive of the European Parliament and of the Council amending Directive 2013/36/EU as regards supervisory powers, sanctions, third-country branches and environmental, social and governance risks, and amending Directive 2014/59/EU, COM/2021/663 Final.

9.2 Qualitative Risk Management Organisation

9.2.1 Introduction

Maintaining an effective and comprehensive qualitative risk management organisation is one of the key obligations incumbent on banks. This means that for every exposure that banks have to their customers (whether arising from loans extended, (bank) guarantees given, a product or service offered and so on) or investment, the financial and economic risks involved are assessed. That risk assessment should be made at the time of establishing the exposure or making the investment, for instance, by estimating the creditworthiness of the client or counterparty. Subsequently, banks should assess the risks frequently and ensure that changes in client or counterparty circumstances that may lead to an increase in the financial-economic risk are identified.

Risk analysis and control should also take place in other areas, where the rules are very extensive and have different perspectives. For instance, the bank has to consider operational risks, market risks related to their investments (in other words, risks related to price movements of their investments), the risk concerning exchange rates, interest rate risk, reputation risk and so on. For banks, the original provisions introduced in 2014 of, *inter alia*, Articles 74(1) and 79 CRD4 phrased that general obligation as follows:

> "effective procedures for identifying, managing, monitoring and reporting the risks to which they (the banks, add. BJO) are or may become exposed".

In this context, identifying risks is the first step; banks should then assess the extent to which these risks are aligned with their risk appetite and risk profile and if so, whether they can be made manageable (whether the risks can be mitigated). If mitigation is achievable, banks must take risk management measures accordingly. If mitigation of risks is not possible (or too costly), banks should terminate the source of the risks, for instance, by winding up the relevant risk positions (de-risking). Unless the bank, within the framework of its policy objectives, recognises that when the risk becomes manifest, and consequently the financial-economic damage occurs, the bank wishes to run that risk (e.g., because the risk fits the defined 'risk appetite'). But banks will usually take the necessary risk control measures when risks are identified. In the case of lending, these will include requesting collateral to cushion the consequences of default

by the counterparty/client, or in the case of operational risks by insuring against them.

As yet, the relevant CRD4 provisions do not make climate, physical or transition risk explicit. Nevertheless, for several years now, bank supervisors have strongly urged banks to include these risks in their overall and existing risk analysis and risk management. Thereby, the basis for this policy by supervisors was initially to be found in soft law instruments and not yet in formal law regulations. In this area, however, there are far-reaching developments that have already led to the introduction of new rules and will soon lead to a further revision of the rules for banks.

In this section, we briefly discuss the relevant rules and developments in terms of legislation for banks regarding the inclusion of climate and environmental, physical or transition risks in qualitative risk management rules.

9.2.2 Existing Framework CRD4

It is appropriate to focus, in this section, on the striking sequence that the European legislator has followed in introducing the new rules regarding risk management by banks regarding climate, physical or transition risk. In my view, the various new rules and what is yet to come show an approach that runs counter to the original principles of Three Pillar banking supervision as created in the Second Basel Accord of 2004.[13]

In the original Three Pillar model, it is assumed that banks should firstly (in *Pillar 1*) take care of setting up a risk management organisation, whereby the minimum requirements incumbent on banks (in a qualitative sense and in a quantitative sense (the capital and liquidity requirements) are met. In *Pillar 2*, banks should ensure a critical (self-)evaluation of the extent to which those minimum requirements adequately cover all risks, and if not, take additional measures accordingly. That critical self-assessment is periodically (usually once a year) reported to the supervisor.[14] The supervisor will then assess, as part of the so-called

[13] Basel Committee on Banking Supervision, *International Convergence of Capital Measurement and Capital Standards A Revised Framework*, June 2004 (bcbs d107) retrievable from www.bis.org.

[14] This is done in reports to the regulator resulting from the Internal Capital and Liquidity Adequacy Assessment Process (ICLAAP), a process that in today's world goes far beyond a simple accounting of capital and liquidity adequacy.

Supervisory Review and Evaluation Process (SREP), the adequacy of the self-assessment submitted by the bank, in other words, the extent to which all risks relevant to the bank have been adequately identified, and that the measures to control these risks are effective and complete. Finally, in *Pillar 3*, as part of 'market discipline,' the bank provides detailed account to the public of its risk management, and the resulting core prudential data (e.g., prudential financial ratios).

When it now comes to developments in terms of qualitative management organisation, one cannot escape the impression that a reverse order, as it were, has been followed in Europe in terms of the design of legislative initiatives. Here, in my opinion, ideological factors play an important role. It is no secret that the European Commission's grand ambitions as expressed in the 2018 Action Plan and the 2021 Strategy emanate from a strong emphasis on market discipline, namely the assumption that banks, to the extent that they disclose their climate targets, can be moved by themselves, through peer pressure and the perception of society, to actively take initiatives to contribute to the realisation of the European institutions' sustainable finance agenda. So, there has been a lot of focus on transparency, disclosure also in the context of Pillar 3 (*Disclosures and Market Discipline*), even if it is limited to the big banks for now.[15]

[15] Particular reference can be made to the complex and detailed rules established pursuant to Article 8 of Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088, *OJEU* L 198, pp. 13–43 ('Taxonomy' or 'Taxonomy Regulation') as further detailed in Commission Delegated Regulation (EU) 2021/2178 of 6 July 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by specifying the content and presentation of information to be disclosed by undertakings subject to Articles 19a or 29a of Directive 2013/34/EU concerning environmentally sustainable economic activities and specifying the methodology to comply with that disclosure obligation, *OJEU* L 443, pp. 9–67, which, amongst other things promote the establishment of the 'green asset ratio' disclosure by banks (GAR) and such other detailed disclosures more. Furthermore, and most importantly for banks, reference should be made to the new rules pursuant to which, with effect from 28 June 2022, and based on the new Article 449a CRR2, large banks that have issued securities admitted to trading on a regulated market of a member state of the European Economic Area (EEA) are required to disclose information on ESG risks, including physical risks and transition risks. The details of these elements in the Pillar 3 disclosures are set out in Commission Implementing Regulation (EU) 2022/2453 of 30 November 2022 amending the implementing technical standards laid down in Implementing Regulation (EU) 2021/637 as regards the disclosure of environmental, social and governance risks, *OJEU* L 325, pp. 1–54.

Subsequently, also in concrete terms, much was invested in developing additions to the supervisory powers under the SREP, in Pillar 2 of the Three Pillar banking supervision model. In anticipation of regulatory changes in this area, supervisors were already addressing the new order, by setting out the necessary more or less binding rules on the design of risk management in soft law instruments.

One example is the EBA Guidelines on the Initiation and Monitoring of Loans,[16] in which, when reviewed in 2020, EBA inserted important paragraphs, so that banks comprehensively account for climate risks, physical risks and transition risks in lending and periodic credit assessment. In addition, pursuant to these EBA guidelines, banks should exercise due diligence when granting loans that should be of an 'ecological' nature. Amongst other things, banks should check to what extent the borrowed funds are actually invested by the borrower in the ecological project or activity.

In 2019, following the adoption of the CRD5, an eighth paragraph was added to the provision of Article 98 CRD4, which mandates EBA to assess whether the inclusion of environmental, social and governance (ESG) risks should be considered in the review and evaluation by competent authorities. EBA was expected to finalise this report by 28 June 2021, and this deadline was met. It led to the publication of the important report of EBA on Management and Supervision of ESG risks for credit institutions and investment firms[17] (the 2021 EBA ESG Report), which we will discuss, in more detail, below in relation to the organisation of qualitative risk management.

What is striking about this is the legislator's choice to begin tinkering first with the design of the SREP, i.e., the process of assessment and evaluation by supervisors at the end of the Second Pillar supervisory process of banks' accountability for risk management and its adequacy. It expresses that the European supervisory community is in a hurry to ventilate their expectations on how banks should design their climate, physical or transition risk management.

But in this way, the reversal in the Three Pillar Model of banking supervision is prominent. Whereas the SREP process should (perhaps in

[16] EBA, *Guidelines on loan initiation and monitoring* of 29 May 2020 (EBA/GL/2020/06).

[17] EBA, *Report on Management and Supervision of ESG Risks for credit institutions and investment firms* of 23 June 2021 (EBA/REP/2021/18).

theory) be a conclusion of a process, in which the bank itself first comes up with the critical evaluation of its own risk management and reports on it to the regulator, it is moving in the direction that regulators will define and impose the preconditions, depth and methodologies of that self-assessment on the banks, which they then have to work with. And, as will be detailed below in Sect. 9.3, there is currently no clarity on the Pillar 1 minimum requirements in terms of climate, physical or transition risks. In other words, it is unclear what banks have to comply with in Pillar 1, and so by its very nature, they cannot properly account for it in their periodic self-assessment.

Is this now problematic? It could be argued that the initiatives of EBA, and as we will see below, the major banking supervisory authority, the ECB, should be placed in the perspective of the (major) concerns that exist about the extent to which European banks are properly introducing, at their own initiative, qualitative risk management in terms of climate, physical or transition risks. It is no secret that these regulators accuse the European banking sector of inertia in this area.[18]

It does result in the methodologies for qualitative risk management developed by regulators to some extent imposing regulator preferences on the banking sector, leaving little room for own initiatives or internally developed methodologies. As is also evident from the 2021 EBA ESG Report, there is a variety of analytical methodologies in this area, with rather an amorphous picture emerging as to which methodology is most effective and best achieves its objectives. In any case, there is currently no focus at all on the proportionality of the rules to be followed by banks, albeit, as mentioned above, the focus is currently mainly on the larger banks.

[18] This is regularly reflected in many recent communications from regulators, for example, the ECB *Report on institutions' climate-related and environmental risk disclosures*, November 2020, ECB *Report on banks' ICAAP practices*, August 2020, ECB *Report on good practices for climate stress testing*, December 2022 and an overview of ECB initiatives and ECB expectations can be read back in Frank Elderson, *"Running up that hill"—How climate-related and environmental risks turned mainstream in banking supervision and next steps for banks' risk management practices*, 3 February 2023, all available at www.bankingsupervision.europa.eu.

9.2.3 The 2021 EBA ESG Report

9.2.3.1 Fulfilling the EBA's Mandate—Definitions of Climate, Physical or Transition Risks

We have briefly touched upon the 2021 EBA ESG Report. We should now explain to which interpretation EBA has arrived to address the first part of the mandate contained in Article 98(8)(a) CRD4 for (common) definitions of climate, physical or transition risks. It is important to note that the 2021 EBA ESG Report has been issued under the mandate given in Article 98(8) CRD4 to prepare the design of new legislation (the CRD4 amendment proposal that will lead to text of CRD6 under the 2021 Banking Package). To that extent, EBA's proposals also cannot be seen as already currently binding rules on banks, but they provide insight into future legislation.

EBA first places the definitions of climate, physical or transition risks in the perspective of its analysis of 'ESG factors' on which it has provided elaborate analysis prior to the determination of the definitions.[19] The ESG factors are to be considered drivers for the establishment of the impact for banks to a certain extent, albeit EBA considers that no common views may be derived from research or the work of the various (international) organisations as to a consistent description of such ESG factors. The ESG factors addressed by EBA in its report may be briefly listed as follows (without referring to the elaborate explanations and analysis of EBA):

- sensitive to public choices and preferences;
- non-financial characteristics;
- uncertainty about impact; short, medium (very) long term;
- patterns in value chain; and
- negative externalities (e.g., pollution, health).[20]

Having considered these ESG factors, EBA then frames its definitions on climate, physical or transition risks to bring perspective to risks to which banks may be exposed. EBA firstly noted:

[19] Paragraph 2.1 of the 2021 EBA ESG Report.

[20] Paragraph 2.1 of the 2021 EBA ESG Report, p. 28 and further.

> "While ESG factors can have positive or negative impacts on institutions through their core business activities, this report focuses more on the latter, in line with the prudential approach to risk management. On the negative side, ESG factors may impact institutions' financial performance by materialising through financial risk categories, such as credit, market, operational, liquidity and funding risks, which are primarily affected by an institution's exposure to its counterparties and invested assets. From a prudential perspective, ESG risks for institutions can thus be defined as the negative materialisation of ESG factors through their counterparties or invested assets. [...], institutions can be impacted by (outside-in perspective) ESG risks through their counterparties and invested assets, as these may be impacted by (outside-in perspective) or have an impact on (inside-out perspective) ESG factors. Both of these perspectives should be taken into account when evaluating ESG risks, but the latter only to the extent that its related impacts further aggravate the impacts from the outside-in perspective, as in that case they would have a negative impact on the counterparty or invested assets. For example, a counterparty's environmentally harmful business activities (negative inside-out impact on environmental factors) might make it more vulnerable to the implementation of transition policies targeting environmental degradation (negative outside-in impact of environmental factors)."[21]

EBA subsequently presented in its report the following definitions (see Table 9.1).

The definitions play a further fundamental role in the manner in which EBA then formulates the further elements of the mandated report, particularly addressing the qualitative risk management requirements for banks. These further issues will be discussed in the following sections.

9.2.3.2 Limits to Double Materiality

The third part included in Article 98(8)(c) CRD4 of the EBA mandate deals with:

> the arrangements, procedures, mechanisms and strategies to be implemented by institutions to identify, assess and manage ESG risks.

This effectively repeats the provisions of Article 74 and 79 CRD4 almost verbatim but adds ESG risks. In my view, the text from the EBA mandate

[21] Paragraph 2.2 of the 2021 EBA ESG Report, p. 32.

Table 9.1 Different risk definitions developed by EBA

ESG Risks	are the risks of any negative financial impact on the institution stemming from the current or prospective impacts of ESG factors on its counterparties or invested assets[22]
Environmental risks	are the risks of any negative financial impact on the institution stemming from the current or prospective impacts of environmental factors on its counterparties or invested assets[23]
Physical risks	risks which arise from the physical effects of climate change and environmental degradation. They can be categorised either as acute—if they arise from climate and weather-related events and an acute destruction of the environment, or chronic—if they arise from progressive shifts in climate and weather patterns or a gradual loss of ecosystem services[24]
Transition risks	the uncertainty related to the timing and speed of the process of adjustment to an environmentally sustainable economy[25]

quoted above cannot be read in isolation from the second part of the mandate as expressed in Article 98(8)(b) CRD4, which sets out the underlying objective of ESG risk management. This involves assessing the impact of ESG risks on banks' short-, medium- and long-term financial stability. This, in its nature from the double materiality perspective (see below for a further elaboration), only zooms in on the impact (risks) to individual institutions, rather than the effects (to society) of climate-related corporate activities or strategies of banks themselves.

It should also be noted here that the EBA's mandate only addresses the so-called microprudential perspective (i.e., the impact/risks to the institutions themselves), and not the macroprudential perspective (which should address the effects of ESG risk volatility on the entire sector[26]).

EBA should, pursuant to Article 98(8)(d) CRD4, examine analytical methods in instruments for measuring the impact of ESG risks on lending

[22] Page 33 of the 2021 EBA ESG Report.

[23] Page 34 of the 2021 EBA ESG Report.

[24] Page 36 of the 2021 EBA ESG Report.

[25] Page 38 of the 2021 EBA ESG Report.

[26] On that macroprudential perspective, see Seraina Grünewald, *Macroprudential policies and climate risks*, EBI Working Paper Series 2023-No. 133 first published on 17 January 2023, and the literature and studies from international and European public institutions discussed extensively herein. See www.ebi-europa.eu.

and financial intermediation. Here, the other perspective of 'double materiality' can be read, namely in what way the core business of banks, to the extent focused on addressing ESG risks, can also have effects on society. Incidentally, it is clearly stated by EBA, for instance, when it comes to the impact and effects of greenhouse gases, that the 2021 EBA ESG Report as far as banks are concerned completely ignores the potential impact of:

> "Scope 1 and Scope 2 CO2 emissions, the physical effects of climate change on [the bank's, add. BJO] premises and/or reputational impacts related to environmental and social factors (e.g., poor working conditions)."[27]

Thus, the 2021 EBA ESG Report focuses on banks' own internal impact/risks and the arrangements, procedures, mechanisms and strategies that banks should adopt to address ESG risks. In doing so, EBA immediately reflects to what extent these arrangements, procedures, mechanisms and strategies can be developed to a sufficiently concrete extent for the full ESG aspects (meaning the entire environmental, social and governance aspects), and concludes that when it comes to the concreteness of its own recommendations, the focus will be on climate and environmental-related risks. Within the subset of climate and environmental-related risks, EBA believes that it would be unwise to focus exclusively on greenhouse gas emission issues and that other climate and environmental-related factors and risks should also be considered. In doing so, EBA explains the factors and risks as follows:

> "Environmental factors are related to the quality and functioning of the natural environment and of natural systems, and include factors such as climate change, biodiversity, energy consumption, pollution and waste management. In the context of this report, they can be defined as environmental matters that may have a positive or negative impact on the financial performance or solvency of an entity, sovereign or individual.
>
> Environmental risks should be understood as the financial risks posed by an institution's exposures to counterparties or invested assets that may potentially be affected by or contribute to the negative impacts of environmental factors, such as climate change and other forms of environmental degradation (e.g. air pollution, water pollution, scarcity of fresh water,

[27] See Paragraph 16 of the 2021 EBA ESG Report.

> land contamination, biodiversity loss and deforestation), in addition to corrective policy actions aimed at addressing such factors."[28]

Within this given framing, EBA comes up with a stand-alone double materiality analysis, where EBA distinguishes between the 'outside-in' risks, namely climate or environmental risks that may arise because the financial performance of the bank's counterparty or the value of the bank's investment is affected by climate and environmental risks. The 'inside-out effect' then in turn relates to the effects of the bank's counterparty activities or the bank's investment in terms of the environment or climate which, in its nature, can have negative financial consequences, which in turn can then lead to outside-in risks.

It is important here to also emphasise that EBA does not only dwell on the concrete (and acute) damage-causing situations related to the broadly defined environmental factors. With some emphasis, we say: *it goes beyond the consequences of climate change* and the usual orientation in that area to the management, control and reduction of greenhouse gas emissions. We must, after all, further address the phrasing "in addition to corrective policy actions aimed at addressing such factors" in the above quoted text of the 2021 EBA ESG Report. We tend to consider that this leads to an enlargement of the causal chain. This means that environmental risks can then also occur as a result of a more distant effect: necessary reforms that need to take place at the relevant counterparty or investee company in order to find a response to government- or society-imposed necessary changes in the business model or actual operation of the business, even if there is not yet an acute manifestation of that risk.

The level of ambition but also the perspective thus put on the table by the EBA is clearly laid out. We see this as a translation of the remit for the industry to exchange short-term thinking for long-term thinking. Consequently, as we will discuss in more detail below, the industry will have to change the usual risk assessment cycle at banks which, roughly speaking, will assume a two- to three-year dimension to a more distant perspective for assessing (future) risks that may impact the bank's financial condition.

This bottleneck and other issues first led to an inventory by EBA of the obstacles banks will face in following up on this new qualitative risk management organisation.

[28] See Paragraphs 47 and 48 of the 2021 EBA ESG Report.

9.2.3.3 Bottlenecks in Risk Management Development

Before EBA makes the explorations regarding how banks should design their risk management function to take into account climate and environmental-related risks, it discusses in detail the bottlenecks identified in practice by banks and supervisors who had started to develop risk analyses and methodologies.

These bottlenecks are discussed in a comprehensive manner by EBA and provide good insight into the extent to which EBA has been able to arrive at a definitive framework for creating risk management procedures, mechanisms and strategies.

In the discussion below, I will explain that in this area, the EBA report is mainly exploratory in nature and that final decisions on the design of regulation have yet to be taken. First, I present the bottlenecks that EBA itself identified, casting it in the same diagrammatic representation that appears in Paragraph 91 of the 2021 EBA ESG Report (see Fig. 9.1).

Each bottleneck deserves further explanation. In doing so, I briefly present EBA's analysis clockwise and starting from the top, and added some own insights here and there.

(i) **Uncertainty**. Is particularly framed by EBA in the uncertainties surrounding ongoing policy development in the European Union and related legislative processes. It also mentions the uncertainty around the manifestation of physical risks, both the timing and magnitude. In my view, it should also be added to this bottleneck that the same can of course be said of transition risk. One of the elements of transition risk is how society (and consumers of services and goods) will react to climate change mitigation measures or adaptations to the (changing) climate. It is often claimed (politically) that this reaction of society or consumers will be impactful, and not infrequently it is consequently suggested that this will lead to significant changes in behaviour, and that it is therefore important to anticipate these significant changes in policy choices and measures. In my opinion, it is uncertain whether those significant changes in behaviour will actually come about on a large scale and throughout all layers of society.

(ii) **Scarcity of Data**. EBA seems sensitive to the concerns often expressed, including by the banking sector, about the scarcity of

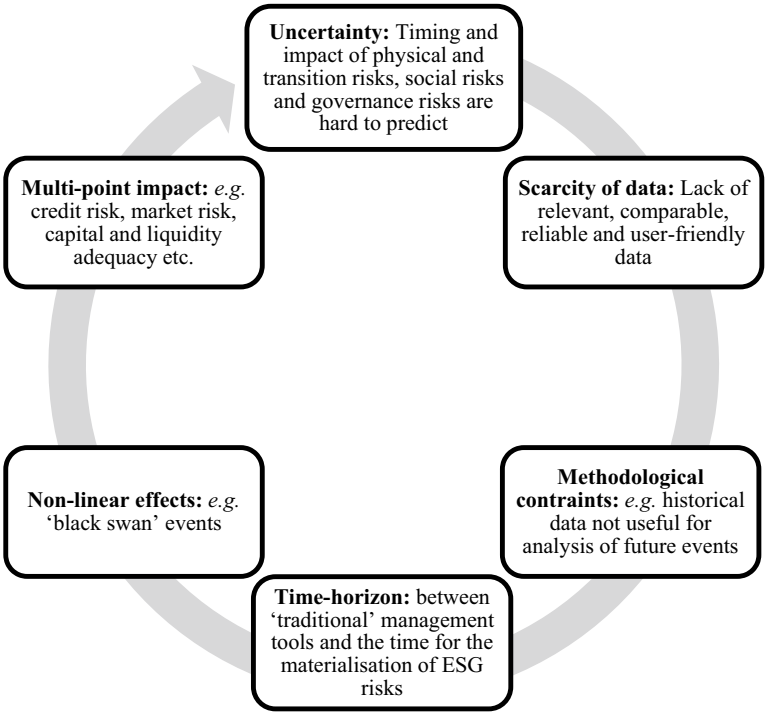

Fig. 9.1 Diagrammatic representation by EBA of bottlenecks in risk management developement

relevant, comparable, reliable and user-friendly data.[29] Whilst it is true that such data are increasingly accessible and available for

[29] In this context, all hopes are pinned on Proposal of 25 November 2021 for a Regulation of the European Parliament and of the Council establishing a single European access point for centralised access to public information relevant to financial services, capital markets and sustainability, COM(2021) 723 final, where centralised data storage and retrieval of that data should serve to alleviate the data scarcity in this area. In my opinion, however, this will not properly address the delay in the collection of data. Not only does it take considerable time to build such a database, but one can also question whether the database will be adequately populated with information from precisely those parts of business and society where there are currently no concrete obligations to come up with effective inventories of climate risk exposure and transition plans, such as small and medium-sized enterprises.

larger companies, the same cannot be said for SMEs, local and regional authorities or companies operating in emerging markets. EBA further calls attention to the fact that the relevant data are currently mostly available on an annual basis, for instance, due to companies following up on the publication of their sustainability reporting under the Corporate Sustainability Reporting Directive (CSRD).[30] By its very nature, this can hinder effectively functioning risk-monitoring systems, as any changes in the risk profile can only be spotted in retrospect or with considerable delay. EBA notes that this could potentially change through the introduction of the CSRD, due to the more extensive and detailed requirements that will be imposed on reporting companies. This improves comparability between them, and the level of detail helps to make better risk analyses. The (somewhat) widening of the circle of reporting companies will also be helpful here, according to EBA, although for very significant parts of the business community, namely SMEs, sustainability reporting will not be mandatory for the time being. For banks, EBA refers to the Pillar 3 disclosure requirements pursuant to the provisions of Article 449a CRR. I question, however, the usefulness of this data being published by large banks for the time being, as data is reported on an aggregate basis. The data collected by banks pursuant to this requirement will not provide direct information on the extent of climate, physical or transition risks of individual customers of the reporting large bank.

Where EBA is understanding of the fact that this bottleneck exists in practice, other regulators take a more critical view of this industry-observed issue. Based on observations of best practices, the industry is then led to believe that lack of data can be adequately compensated by model-based scenario analysis with which some banks have had experience in practice.[31]

[30] Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting, *OJEU*, L 322, pp. 15–80.

[31] On this, see the ECB in the section "Emissions intensity modelling" on pp. 22–26 of the *ECB report on good practices for climate stress testing—Data requirements for climate stress testing*, December 2022.

(iii) **Methodological Bottlenecks**. Risk models for estimating and forecasting (the probability of occurrence of) financial-economic damages are usually based on historical data.[32] In the absence of historical data, such risk models cannot be applied. This bottleneck is related to the bottleneck of lack of data. Another methodological bottleneck as observed by EBA is that it is still challenging to estimate the actual financial-economic damage of climate and environmental-related risks. Moreover, it remains a challenge to estimate the extent to which existing business plans are adversely affected by climate- and environmental-related risks, in particular, the extent to which these impact banks' resilience. This observation may be read as meaning that EBA points to the large differences that exist in banks' business plans, and that it is therefore not possible to draw one comprehensive conclusion regarding the extent to which financial-economic damage due to climate- and environmental-related risks leads to reduced resilience. And finally, EBA points to the lack of a harmonised set of definitions regarding business activities (of bank counterparties) aimed at sustainability objectives.

(iv) **Time Horizon**. Banks' 'stakeholder models' and the pressure that can be exerted on them by shareholders as well as macroeconomic circumstances (e.g., addressing cyclical trends in the economy) often lead banks' business plans to assume shorter planning periods than the long-term effects expected from climate- and environmental-related risks. For example, in plans to achieve a carbon–neutral European economy, the time horizon is 30 years (the 2050 target), resulting in an uneven time horizon with regard to the strategic planning of business activities on the one hand, and

[32] For example, in common credit risk models, the risk weighting is estimated by applying three parameters leading to a 'risk amount'. The first parameter, the probability of default (PD), assumes a calculation on the probability that a counterparty of the bank will default. The second parameter is the loss given default (LGD). Herein, based on the assumption that a counterparty will default on its obligations, the amount that will turn out to be unrecoverable is assessed. This takes into account the collateral provided by the counterparty and past experience in enforcing the relevant collateral (in other words, the duration, costs involved in enforcement and so on). Finally, the exposure at default (EaD), in which it is assessed, starting from a simulated date of the occurrence of payment difficulties by the counterparty, what amount is still outstanding on that date (taking into account repayments already made, periodic interest payments and cost reimbursements and so forth).

the need to address effects of climate- and environmental-related risks in risk management models on the other.

(v) **Non-linear Effects**. Here, I best leave the EBA to speak, where it sets out the following with regard to this bottleneck:

> "Most ESG risks, especially those related to environmental risks, are non-linear in nature. Both physical and transition risks can create complex chain reactions and cascade effects, which in turn could generate unpredictable environmental, geopolitical, social and economic dynamics. This means that, for example, when (detrimental) events such as increases in local or global temperature occur, their impact is greater in relation to the instantaneous magnitude of the event itself and over time."[33]

In my view, the EBA wants to argue here that the impact of climate- and environmental-related risks will not necessarily translate exclusively into incidental losses for banks (e.g., flooding in an area leads to immediate depreciation in the value of houses on which mortgage collateral for the bank is located) but may have a larger comprehensive impact. Is the EBA thinking, for example, of the consequence of the relevant flooding on the bank's future earning power with respect to new mortgage financing to be provided to customers who want to live in the relevant flood area (where, based on experience, the bank may want to refrain from providing financing because of the high risk, including the insurability of the risk due to policies of insurers)? In any case, most of the current risk management models, at least in terms of budgeting for possible future financial-economic losses, do not take such holistic approach. On that point, I can agree with EBA that if the objective of complementary risk management and associated strategies is to also address earning power, there will be work to be done for many banks, particularly in strategic risk management (i.e., the explorations about the future risks a bank may be exposed to in view of its business model), to also account for such comprehensive impact analyses.

(vi) **Multi-point Impact**. This bottleneck identified by EBA for the development of effective risk management strategies, analyses and

[33] See Paragraph 91 of the 2021 EBA ESG Report.

> procedures considers the fact that climate and environmental-related risks can lead to financial-economic impacts from different angles. The most obvious impact concerns the manifestation of risks in different areas as a result of the same events. These can affect credit risk (credit losses), and at the same time market risk (impairment of investments). Those events may also lead to significant write-downs of bank capital to cover incurred losses. EBA cites a range of other possible consequences. My reading of that part of the 2021 EBA ESG Report is that I found EBA's analysis to be a bit of an open door. It is less a bottleneck than a reminder that when defining risk management strategies, analyses and procedures, banks will be required to take a comprehensive look at all endogenous and exogenous factors that should contribute to the design of the future-proof risk management strategy, analysis and procedures.

EBA's comprehensive treatment of the aforementioned bottlenecks shows that EBA takes a cautious approach in its exploration of the necessary elements of risk management strategies, analyses and procedures to address climate and environmental-related risks. EBA continues this exploration by describing an assessment methodology tailored to climate and environmental-related risks, starting from a business analytical framework often used in practice.[34] That methodology is fairly obvious, and needs no further discussion. However, we need to address the subject matter of risk drivers and transmission channels.

9.2.3.4 Risk Drivers and Transmission Channels of Climate and Environmental Risks

The 2021 EBA ESG Report subsequently looks at the so-called 'risk drivers' and 'transmission channels' of climate and environmental risks, i.e., in what way banks are exposed to these risks, and in addition, what type of risk is affected. In doing so, EBA builds on models developed in the literature and by other regulators.[35] These models assume that climate and environmental risks should not be classified as a new special risk that

[34] See Paragraph 93 of the 2021 EBA ESG Report for a representation of this.

[35] One of the first and extremely authoritative studies on this subject was delivered by the Bank of England's Prudential Regulation Authority in 2018. For both the banking and insurance sectors, the PRA released comprehensive analyses, including a focus on the

should be given a place in the risk management organisation alongside the traditional risk families, but that the risks will be a special qualifying factor with respect to traditional risks, such as credit risk, market risk, operational risk, liquidity risk, interest rate risk, reputational risk and so on.

EBA defines the term 'transmission channels' as follows:

> "The causal chains that explain how these risk drivers impact institutions through their counterparties and invested assets."[36]

I will first present the diagrammatic model from the 2021 EBA ESG Report[37] (see Fig. 9.2) and then come to a further discussion of it.

The risk drivers are embedded in the definitions of what should be understood by ESG risks, more specifically climate and environmental risks. Regarding the model as shown above, EBA also includes social and governance risks to make the model complete. It should be said, however, that EBA's further reflections on risk management particularly focus on climate- and environmental-related risks, and this is also why this chapter focuses on those risk areas.

There is obviously a whole argument to be made about the transmission channels outlined by EBA. EBA is fairly cursory when it comes to elaborating on this. Perhaps with some intention, further analysis is left to be undertaken because the evidence required for this is difficult to provide. Moreover, the extent to which there is a real impact and therefore a real manifestation of financial-economic risk will depend heavily on the bank's individual business model. Let me attempt to demonstrate the complexity of this analysis with some examples.

I address the transmission channel of lower profitability first. Suppose a bank has a significant concentration of financing of fossil fuel companies, e.g., power companies that rely mainly on coal-fired power plants in the

transmission channels of climate and environmental risks. See: Bank of England, Prudential Regulation Authority, *Transition in thinking: The impact of climate change on the UK banking sector* (September 2018), available at www.bankofengland.co.uk//media/boe/files/prudential-regulation. See further: Basel Committee on Banking Supervision, *Climate-related risk drivers and their transmission channels*, 14 April 2021, www.bis.org/bcbs/publ/d517.pdf.

[36] See the definition on p. 7 of the 2021 EBA ESG Report.

[37] 2021 EBA ESG Report, Figure 4 Summary of ESG risk drivers, their transmission channels and how these can impact financial risk categories, at p. 34.

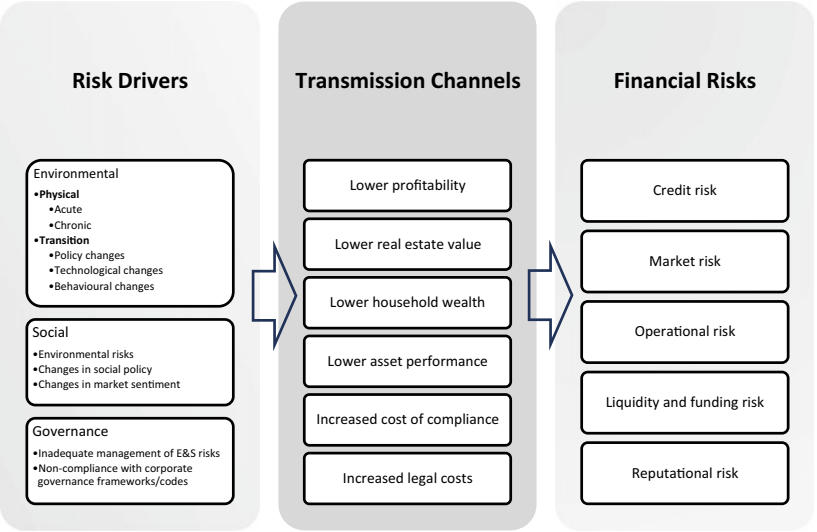

Fig. 9.2 Diagrammatic model of risk drivers, transmission channels and financial risks by EBA

production of electricity. The bank derives profitability from these financings from the difference between the interest income from the financing provided and the bank's funding costs.

It is obvious that the bank's transition plans should take into account the 'finite' nature of the business model of those energy companies that do not adopt a sustainable business model. If, in its discussions with its clients in that sector, the bank sees too little progress in terms of the tilt of the business model (in other words, the extent to which the energy companies are changing their sustainability strategies by reducing reliance on fossil fuel power plants), the bank will have to take into account the future termination of the relationship with the energy companies in its risk assessment, as it is predictable that the companies in question will run into continuity problems.

But there is no immediate write-off (*impairment*) of the financing provided to the energy companies for the time being, especially if the customer regularly fulfils its payment obligations according to the contractual agreements. The impact on the bank's profitability is therefore minor, as for the time being, there will be regular earnings on the

loans, and no need for a loan write-off which would be at the expense of either equity or the bank's results.

The bank's credit risk is not significantly altered, in the short term, and in other words, there is no causal link between climate- and environmental-related risk and the assessment of the performance of the relevant credit. However, it could be said that there is (and should be) a change in the bank's credit rating with regard to customers in the energy sector (to the extent that they do not deploy demonstrably effective sustainability strategies). This change in assessment will then have to be fitted into the bank's transition plan, in other words, the extent to which the bank will want[38] to terminate the customer relationship in the future, the timing of this and the extent to which the bank is willing and able to bear the financial-economic risks then manifested as a result of the early termination of the credit relationship.

That analysis may lead the bank to foresee that there may be an impact on profitability (or even more likely on equity) in the medium or long term because of the execution of the transition plan, and if so, the transmission channel will actually have an impact on the financial-economic condition of the bank.

I stay with the same case of a bank's financing of power companies operating mainly coal-fired power plants to go into the transmission channel 'lower asset performance.' Asset performance here refers to the asset of the credit provided to the power company that will appear as a receivable on the bank's balance sheet. The assumption is that as a result of a physical risk or a transition risk, the bank will have to write down part or all of the receivable (due to a manifest or expected loss) or make an allowance accordingly (under a specific or a generic credit risk adjustment).

This matter is subject to very specific rules under the capital requirements for banks. An important provision in this regard is Article 178 CRR (*default by debtors*). In the case I have described, the bank will not be able to proceed to classify the customer as a defaulter by applying the provisions of Article 178(1)(b) CRR, which presupposes that the debtor has been in default of its obligations to the bank for more than 90 days.

[38] And in the current *zeitgeist* where banks are often called to account for their responsibilities to society, there may come a time when the bank will have no choice but to proceed to terminate the lending relationship on pain of legal action brought against the bank by activist groups.

The question then is whether the bank in the case at hand should apply the provisions of Article 178(1)(a) CRR which reads as follows:

> "A default shall be considered to have occurred with regard to a particular obligor when either or both of the following have taken place:
>
> (a) the institution considers that the obligor is unlikely to pay its credit obligations to the institution, the parent undertaking or any of its subsidiaries in full, without recourse by the institution to actions such as realising security;"

In which cases a bank must apply this rule is then detailed in the third paragraph of Article 178 CRR. Leaving aside the cases where the bank has filed for bankruptcy or agreed a restructuring of the credit, in fact, only one circumstance can possibly be applied and that concerns the circumstance mentioned in Article 178(3)(b) CRR, which reads:

> "the institution recognises a specific credit adjustment resulting from a significant perceived decline in credit quality subsequent to the institution taking on the exposure;"

It could be that, based on the assessment of the energy company's sustainability reports that it publishes pursuant to the CSRD (and in that case, the energy company will have to fall within the scope of this Directive), a bank will want to make an assessment around the "perceived significant reduction in credit quality" and will apply a specific credit risk adjustment for that reason. However, if the bank applies the regular accounting standards in connection with the application of the provisioning policy to credit exposures, it will not immediately follow that such a specific credit risk adjustment is at issue, provided there is regular compliance with the credit agreement by the borrower (the power plant operator). Therefore, the regular bank balance sheet item valuation rules preclude the classification of the loan to the power company as a 'defaulting debtor' within the meaning of Article 178(1)(a) CRR.

If it is a bank that uses the Internal Ratings-Based method (an internal models bank) and, for example, calculates all parameters (PD, LGD and EaD [see footnote 32 for further explanation of these factors]) with its own internal models for the risk weighting of its exposures, such a bank would not even be allowed under the current rules to arrive at a higher probability of default or factor of loss in the event of default on subjective

grounds (e.g., the bank cannot agree with the sustainability strategy of the energy company). In this regard, Article 179(1)(a) CRR provides as follows:

> "an institution's own estimates of the risk parameters PD, LGD, conversion factor and EL shall incorporate all relevant data, information and methods. The estimates shall be derived using both historical experience and empirical evidence, and not based purely on judgemental considerations. The estimates shall be plausible and intuitive and shall be based on the material drivers of the respective risk parameters. The less data an institution has, the more conservative it shall be in its estimation;"

The above argument is not aimed at challenging the framework of thinking that has been developed by EBA around risk factors and transmission channels. It seeks to provide insight into the complex trade-offs that banks will have to make when assessing risks, and the extent to which those risks may also lead to actual financial and economic consequences. There is therefore extensive work ahead for banks if they have not already started working on this. Those who keep their ears open can observe that some banks are already far advanced in making such (strategic) risk analyses. But the reality is also that this is not true for all players in the sector.

9.2.3.5 Quantitative and Qualitative Methods

In the process of identifying, assessing and taking action, banks will therefore need to address climate and environmental-related risks and factors and ultimately arrive at a weighting of the potential financial-economic impact of these risks and factors. In terms of risks, EBA believes that obvious quantitative and qualitative methods are already available for this, for example, by leaning on greenhouse gas emission indicators from industries, aviation and other greenhouse-emitting enterprises and institutions based on the methodologies that have been developed in this area. These include, for example, those of the International Organisation for Standardisation (ISO) 14064-1[39] and the 2013 European Commission recommendations on the use of common methodologies for

[39] See: Greenhouse gases, Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals, retrievable from www.iso.org/standard/66453.html.

measuring and disclosing the environmental performance of products and organisations throughout their life cycle.[40]

Moreover drawing from the standards for sustainability reporting[41] and the definitions and classifications of sustainable economic activities of the Taxonomy Regulation[42] and other taxonomies as well as external ratings and standards, EBA believes that there are sufficient starting points for measuring sustainability factors in quantitative and qualitative terms.[43] Annex I to the 2021 EBA ESG Report provides a non-exhaustive list of ESG factors, indicators and calculation methods that should help banks and regulators identify ESG characteristics.[44]

Sub-chapter 4.2 of the 2021 EBA ESG Report then reflects on how banks should design risk management. In doing so, EBA notes that whilst banks already address ESG risks in their risk management to some extent, efforts in this regard are still insufficient. There is a need, according to EBA, for banks to change their efforts to a much greater extent from a 'transactional approach' (i.e., assessing ESG risks for individual transactions) to a portfolio-wide approach. Moreover, banks should apply more forward-looking methods to see what the extent of the financial-economic impact of ESG risks will be and to test what the impact of this will be on prudential risks. In doing so, EBA also notes that banks need to shift their view of reputational risk management towards financial-economic analysis and impact.[45]

[40] Commission Recommendation of 9 April 2013 on the use of common methods for measuring and disclosing the environmental performance of products and organisations during their life cycle, *OJEU* 2013 L 124, pp. 1–210.

[41] To which EBA refers emphatically to the work of the Financial Stability Board, Task Force on Climate-related Financial Disclosures (TCFD), which has developed very comprehensive methodologies in this area. See, for example, The Task Force on Climate-related Financial Disclosures Status Report 2022 available at https://assets.bbhub.io/company/sites/60/2022/10/2022-TCFD-Status-Report.pdf.

[42] I refer again to this important regulation: Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088, *OJEU* L 198, pp. 13–43.

[43] Paragraphs 96 and following of the 2021 EBA ESG Report.

[44] Annex 1 Non-exhaustive list of ESG factors, indicators and metrics, pp. 152–165 of the 2021 EBA ESG Report.

[45] See Paragraph 229 and following of the 2021 EBA ESG Report.

Overall, the EBA expresses the expectation that banks will focus key efforts on climate and environmental risks first and other ESG risks second. In doing so, EBA is convinced that current international standards, measurement methods, taxonomies, benchmarks and ratings provide sufficient source material to arrive at accurate weighting of existing and future environmental and climate risks, whereby banks should consider a much longer time frame to measure the impact on their own operations and its potential financial-economic consequences. EBA urges banks to also incorporate these risk management measures into the so-called Internal Capital Adequacy Assessment Process (ICAAP) and Internal Liquidity Adequacy Assessment Process (ILAAP) required under Articles 74 and 86 CRD4 (see below on the intended amendments to that provision as a result of the Banking Package 2021), and EBA also assumes that banks' recovery plans account for ESG risks, should they materialise and have extreme financial-economic impact.

It is clear that these EBA recommendations will have a major impact on the future relationship between banks and supervisors. Supervisors' expectations in this area are high and impose a high degree of urgency on the banking sector to achieve a radical change in their risk management organisation. These supervisory expectations were also already evident in the ECB's work, including the publication in 2020 of the Guide on climate-related and environmental risks, which we will discuss in the next section.

9.2.4 ECB Guide on Climate-Related and Environmental Risks

9.2.4.1 An Activist ECB

As mentioned above, the ECB, in its role as central supervisory authority of the Eurozone banking sector, has been extremely active in recent years in moving the goalposts in terms of how banks should incorporate ESG risks, especially climate- and environmental-related risks, in their risk management. After the ECB vented its disappointments about the progress in this area amongst the banks under its direct supervision several times,[46] in November 2020, it came out with a comprehensive 'guide'

[46] For an overview of ECB publications in this area, see: F. Elderson's recent speech of 2 February 2023 referred to in footnote 18.

(the Guide on climate-related and environmental risks,[47] '2020 ECB Guide') on how banks should tackle this issue.

The title of the 2020 ECB Guide says it all: this key supervisor for the European banking sector expresses its expectations on how banks will need to take charge of organising risk management concerning climate and environmental-related risks. Those familiar with the dynamics in the system of supervision under the Single Supervisory Mechanism (SSM) and the role of the ECB will agree with the observation that such communications from the ECB have almost the force of formal legislation. In other words, banks subject to the direct supervision of the ECB will not easily be able to ignore the path intrusively pointed out by the ECB.[48]

When it comes to the application of the 2020 ECB Guide, the ECB considers that its formal basis and legal force are based on existing provisions in the CRR and CRD4 and that the provisions in the 2020 ECB Guide will have to be applied in an individualised manner by banks, depending on their exposures to climate and environmental-related risks. These may differ from bank to bank, depending on the applicable business model, operations and risk profile, regardless of the size of the bank, the sector in which the bank (mainly) does business and the geographical location of its operations.[49]

9.2.4.2 The Thirteen ECB Risk Management Expectations

The ECB summarises its expectations on risk management by banks[50] in 13 points, which are presented below fully, after which I conclude this sub-section with some observations.

[47] ECB, Guide on climate-related and environmental risks, Supervisory expectations relating to risk management and disclosure, November 2020, available at www.bankingsupervision.europa.eu.

[48] The ECB itself states that its Guide is not 'binding' but is meant to help get the banking sector dialogue going. See p. 3 of the 2020 ECB Guide.

[49] In Paragraph 2.1, the ECB hereby states, "Depending on the business model, operating environment and risk profile, an institution, irrespective of its size, could be concentrated in a market, sector or geographic area that is exposed to material physical and transition risks, which means that it could be extremely vulnerable to the impacts of climate-related change and environmental degradation."

[50] The ECB uses the CRR jargon 'institutions' to refer to banks whether organised in a group or not, with a holding company at the head and being the focus point of supervision on a consolidated basis.

1. Institutions are expected to understand the impact of climate-related and environmental risks on the business environment in which they operate, in the short, medium and long term, in order to be able to make informed strategic and business decisions.
2. When determining and implementing their business strategy, institutions are expected to integrate climate-related and environmental risks that impact their business environment in the short, medium or long term.
3. The management body is expected to consider climate-related and environmental risks when developing the institution's overall business strategy, business objectives and risk management framework, and to exercise effective oversight of climate-related and environmental risks.
4. Institutions are expected to explicitly include climate-related and environmental risks in their risk appetite framework.
5. Institutions are expected to assign responsibility for the management of climate-related and environmental risks within the organisational structure in accordance with the three lines of defence model.
6. For the purposes of internal reporting, institutions are expected to report aggregated risk data that reflect their exposures to climate-related and environmental risks with a view to enabling the management body and relevant sub-committees to make informed decisions.
7. Institutions are expected to incorporate climate-related and environmental risks as drivers of existing risk categories into their existing risk management framework, with a view to managing, monitoring and mitigating these over a sufficiently long-term horizon, and to review their arrangements on a regular basis. Institutions are expected to identify and quantify these risks within their overall process of ensuring capital adequacy.
8. In their credit risk management, institutions are expected to consider climate-related and environmental risks at all relevant stages of the credit-granting process and to monitor the risks in their portfolios.
9. Institutions are expected to consider how climate-related and environmental events could have an adverse impact on business continuity and the extent to which the nature of their activities could increase reputational and/or liability risks.
10. Institutions are expected to monitor, on an ongoing basis, the effect of climate-related and environmental factors on their current market

risk positions and future investments, and to develop stress tests that incorporate climate-related and environmental risks.

11. Institutions with material climate-related and environmental risks are expected to evaluate the appropriateness of their stress testing with a view to incorporating them into their baseline and adverse scenarios.
12. Institutions are expected to assess whether material climate-related and environmental risks could cause net cash outflows or depletion of liquidity buffers and, if so, incorporate these factors into their liquidity risk management and liquidity buffer calibration.
13. For the purposes of their regulatory disclosures, institutions are expected, to publish meaningful information and key metrics on climate-related and environmental risks that they deem to be material, with due regard to the European Commission's Guidelines on non-financial reporting: Supplement on reporting climate-related information.[51]

9.2.4.3 Comparison to the 2021 EBA ESG Report

Many of the points raised here by the ECB were also given a place in the subsequently produced 2021 EBA ESG Report. This should not be surprising either, as in the system of European financial supervision, the ECB has an important seat at the table of the EBA and undoubtedly played an important role in the making of the 2021 EBA ESG Report. To that extent, there is uniformity of frameworks drawn up by the ECB and the EBA, keeping in mind that the EBA's work has a broader scope. Indeed, EBA's roles extend to the entire European Union, whilst the ECB's work under the SSM extends exclusively to the Eurozone.

The 2021 EBA ESG Report furthermore covers a broader content area because, unlike the 2020 ECB Guide, it also covers ESG risks other than climate- and environmental-related risks. However, as indicated above, much of the EBA's work in the scoping study focused on climate and environmental-related risks, and then also with a focus on the issue of greenhouse gas emissions and the Paris Agreement targets to keep those emissions within the 1.5 °C limit. This focus is also reflected in the 2020 ECB Guide.

Another important and common element between the two policy documents concerns the emphasis placed on the need for banks to assume a longer time horizon when managing climate- and environmental-related

[51] See pp. 4 and 5 of the 2020 ECB Guide.

risks, rather than the short- and medium-term horizon that usually forms the basis of banks' strategic risk management. In this regard, see point 2 of the ECB recommendations cited above. What is noteworthy here is that the ECB also links the need for this long-term perspective to the likelihood that certain effects around climate change will occur sooner than expected, thereby reducing the number of surprises banks would face, should such an acceleration occur.[52]

When it comes to the definitions of climate and environmental-related risks, the ECB stays within the framework of thinking developed so far in the academic literature[53] and international studies,[54] looking for the main drivers of 'physical risk' and 'transition risk.' In doing so, the ECB argues that the first driver will be mainly relevant to the agriculture, forestry, fisheries, public health, energy, mining, transport and infrastructure and

[52] The ECB argues in this respect on p. 13 of the 2020 ECB Guide: "As the planning horizon and average loan tenor for institutions is typically shorter than the time horizon in which the effects of climate-related change and environmental degradation would primarily arise, it is important for institutions to take a forward-looking approach and consider a longer than usual time horizon. In addition, adopting a forward-looking perspective enables institutions to respond in a timely manner should the pace of the transition to a low-carbon economy accelerate and transition risks materialise more rapidly than expected." See for a ground-breaking and timely discussion of this point the speech of Mark Carney, Governor of the Bank of England, 'Breaking the Tragedy of the Horizon—climate change and financial stability', 29 September 2015, to be retrieved from https://www.bankofengland.co.uk/-/media/boe/files/speech/2015/breaking-the-tragedy-of-the-horizon-climate-change-and-financial-stability.pdf. This point is further elaborated by Riso, ibid., in his sub-section 9.2.2, pp. 282–284 'The Tragedy of the Horizon and the Question of Short-Termism' and in the remarks in sub-section 9.5.6 on pp. 324–325: "The specific time horizon of climate-related and environmental risks may be one of the main factors requiring an adaptation of the current SREP framework: capital requirements set in Pillar 2 are estimated to cover primarily the unexpected losses over a 12-month period, and capital guidance (P2G) is based on stressed conditions over a forward looking horizon of at least two years; therefore, EBA advices to assess the sustainability and viability of banks' business models over a much longer time frame (even up to ten year), bearing in mind that the forward looking assessment of longer-term resilience could, e.g. become a new area of business model analysis."

[53] See, for example: Kern Alexander and Paul G. Fisher, *Banking Regulation and Sustainability* (November 2018). Available at SSRN: https://ssrn.com/abstract=3299351.

[54] See, for example: Bank of England, Prudential Regulation Authority, *Transition in thinking: The impact of climate change on the UK banking sector* (September 2018), available at https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/report/transition-in-thinking-the-impact-of-climate-change-on-the-uk-banking-sector.pdf.

tourism sectors. The second driver will be mainly relevant to the energy, transport, industry, construction and agricultural sectors.

As is also the case in the 2021 EBA ESG Report, the ECB believes that the financial-economic impact of banks' assumption of those risks should be addressed in the existing risk areas, i.e., credit risk, market risk and operational risk. However, the ECB adds that other risk areas should also be included in the strategic risk analysis, including other (as the ECB calls it 'non-Pillar 1' risk areas): migration risk, the risk concerning real estate, credit spread risk in the banking book and strategic risks. In addition, the ECB very explicitly highlights the management of liquidity risks, which appears to a lesser extent in the 2021 EBA ESG Report.[55]

9.2.4.4 The ECB's Thinking on Risk Management

The ECB summarises its views on incorporating climate and environmental-related risks into the existing strategic risk framework of banks in a compact framework of thought,[56] where the ECB emphasises that the points raised are exemplary. This framework is worth reproducing as set out in Table 9.2.

The ECB assumes that when it comes to both physical risks and transition risks, the financial-economic impact for banks can be very significant, and that the first methodologies to estimate this magnitude are being developed rapidly. In doing so, the ECB indicates that these methodologies have so far mainly focused on climate change-related impacts, but that broader environmental-related impacts are also increasingly being identified, focusing on the loss of certain ecological processes (such as the scarcity of water, the loss of biodiversity and the shortage of (natural) resources and raw materials).

Amongst all the explanations in the 2020 ECB Guide, it is striking that the ECB invests in analysing to what extent existing formal law provisions and soft law instruments based on them (such as the EBA guidelines[57]) already provide for banks' obligations to account for climate and environmental-related risks.

[55] See pp. 10 and 11 of the 2020 ECB Guide.

[56] See p. 12 of the 2020 ECB Guide.

[57] For example, through extensive references to the *EBA Guidelines on internal governance* (EBA/GL/2017/11).

Table 9.2 ECB framework for the incorporating climate and environmental-related risks into the existing strategic risk framework of banks

Risks affected	*Physical*		*Transition*	
	Climate-related	*Environmental*	*Climate-related*	*Environmental*
	• Extreme weather events • Chronic weather patterns	• Water stress • Resource scarcity • Biodiversity loss • Pollution • Other	• Policy and regulation • Technology • Market sentiment	• Policy and regulation • Technology • Market sentiment
Credit	The probabilities of default (PD) and loss given default (LGD) of exposures within sectors or geographies vulnerable to physical risk may be impacted, for example, through lower collateral valuations in real estate portfolios as a result of increased flood risk		Energy efficiency standards may trigger substantial adaptation costs and lower corporate profitability, which may lead to a higher PD as well as lower collateral values	
Market	Severe physical events may lead to shifts in market expectations and could result in sudden repricing, higher volatility and losses in asset values on some markets		Transition risk drivers may generate an abrupt repricing of securities and derivatives, for example, for products associated with industries affected by asset stranding	
Operational	The bank's operations may be disrupted due to physical damage to its property, branches and data centres as a result of extreme weather events		Changing consumer sentiment regarding climate issues can lead to reputation and liability risks for the bank as a result of scandals caused by the financing of environmentally controversial activities	
Other risk types (liquidity, business model)	Liquidity risk may be affected in the event of clients withdrawing money from their accounts in order to finance damage repairs		Transition risk drivers may affect the viability of some business lines and lead to strategic risk for specific business models if the necessary adaptation or diversification is not implemented. An abrupt repricing of securities, for instance due to asset stranding, may reduce the value of banks' high quality liquid assets, thereby affecting liquidity buffers	

By pointing for this purpose to the EBA mandate inserted in 2019 in Article 98(8) CRD4, the legal framework has not yet been amended in a formal sense to provide a basis for compliance with the risk control measures as the ECB strongly desires. For now, the EBA mandate assumes an exploration of how the formal law provisions of banking supervision will need to be designed. Below, we will discuss the future adjustments to the CRD4 as a result of the CRD6 text proposed with the 2021 Banking Package. As a result, that formal law basis for banks' necessary risk management will be made more explicit.

It is noteworthy in this context that the ECB welcomed the launch of the Basel Committee's 2022 Principles with much applause.[58] The ECB sees these principles as a better foundation for the application of bank supervision in the SSM in terms of managing climate- and environmental-related risks. Indeed, in the absence of a formal legal basis in Europe, the emergence of the Basel Committee principles is a welcome addition to the internationally agreed principles from which authority can be derived. Even though Basel Committee policy documents do not have formal legal force, they exert an important influence. We will discuss these principles in the next sub-section.

9.2.5 Basel Committee Risk Management and Supervision Principles

9.2.5.1 Late Creation of Basel Committee on Principles

In mid-2022, the Basel Committee published a major standard "Principles for the effective management and supervision of climate-related financial risks"[59] (2022 BCBS Principles), which should lead to a global embrace of the need for banks to account for climate- and environmental-related risks in risk management and their supervision by (prudential) supervisors.

With the publication of the 2022 BCBS Principles, the Basel Committee withstood the pressure (especially from the US side under the presidency of Donald Trump) to stay away from developing climate

[58] See speech by Elderson "*Running up that hill*" of 3 February 2023 referred to in footnote 18.

[59] Basel Committee on Banking Supervision, *Principles for the effective management and supervision of climate-related financial risks,* June 2022 ('2022 BCBS Principles') available at www.bis.org.

change policies and standards. It is known that thanks to the pressure exerted by the Europeans and British to accelerate the work of the Basel Committee, concrete results have been achieved in this area.[60] It should be kept in mind that Basel Committee standards and policies should in principle be embraced at the global level, including by major jurisdictions such as the People's Republic of China, the United States, Canada, Japan and key South American countries.[61]

The 2022 BCBS Principles were preceded by three Basel Committee scoping studies on the legislative initiatives undertaken in this area by Basel Committee member states, the definition of climate- and environmental-related risks and methodologies to calculate the extent of financial damage.[62] The Basel Committee also presents the 2022 BCBS Principles as a necessary complement to existing standards in terms of prudential banking supervision, including the important *Core principles for effective banking supervision* (BCP)[63] and the principles of the *Supervisory review process* (SRP).[64]

9.2.5.2 Basel Committee Principles

The Basel Committee presents the 2022 BCBS Principles as a starting document to promote the improvement of practices in the banking sector as regards the creation of a risk management organisation, as well as to

[60] Not coincidentally, the working group that worked on the development of the 2022 BCBS Principles was established only in 2020.

[61] Basel Committee standards and policies are applied in more than 160 states around the world in the design of prudential rules for banks, albeit that in many jurisdictions those standards and policies are imposed only on the large internationally operating banks.

[62] Basel Committee on Banking Supervision, *Climate-related financial risks: a survey on current initiatives*, 30 April 2020, www.bis.org/bcbs/publ/d502.pdf. Basel Committee on Banking Supervision, *Climate-related risk drivers and their transmission channels*, 14 April 2021, www.bis.org/bcbs/publ/d517.pdf, and Basel Committee on Banking Supervision, *Climate-related financial risks—Measurement methodologies*, 14 April 2021, www.bis.org/bcbs/publ/d518.pdf.

[63] Basel Committee on Banking Supervision, *Core Principles for Effective Banking Supervision*, September 2012, https://www.bis.org/publ/bcbs230.pdf.

[64] Basel Committee on Banking Supervision, *Supervisory review process*, SRP 10 to SRP 99 of the consolidated Basel Framework, available at https://www.bis.org/basel_framework/index.htm?m=2697.

provide guidance for their supervision by competent supervisors.[65] Apparently, the Basel Committee believes that important steps still need to be taken in this area, both by the industry and by supervisors, without expressing any further opinion.

The principles divide into *12 principles* for effective *risk management by banks*, and *five principles for their supervision* by supervisors. They aim to provide a starting point for the development of risk management practices by banks, and their supervision to create a uniform framework for internationally active banks, and at the same time, the principles aim to maintain sufficient flexibility given the highly divergent and evolving practices in the industry. The principles aim to accommodate diversity in the global banking sector and should be applied based on the principle of proportionality, taking into account the size, complexity and different risk profiles of the individual institutions concerned. The scenario analyses and stress testing methodologies are mainly focused on (globally) internationally operating banks, but the Basel Committee stresses that smaller banks can also benefit from the structured approach developed by the Committee.

The Basel Committee stresses that climate-related risks (and their drivers) may result in traditional financial risks for banks, whereby it is important that banks test what the effects and impact of these may be on their business plan and that they should consider what the materiality of those financial risks may be. In this respect, the Basel Committee believes that banks themselves should assess the extent to which climate-related risks could affect their own business, whereby banks should also assess the extent to which they are willing to accept those risks (in other words, risk analysis should be aligned with the bank's so-called 'risk appetite'). The Basel Committee states the following:

> "Climate-related risk can have wide-ranging impacts in terms of the sectors and geographies it affects. Banks should take into account the unique characteristics of such risks, including but not limited to potential transmission channels, the complexity of the impact on the economy and financial sector, uncertainty related to climate change and potential interactions between physical and transition risks."[66]

[65] See Paragraph 4 of the 2022 BCBS Principles.

[66] Paragraph 8 of the 2022 BCBS Principles.

The Basel Committee further argues, in line also, as discussed above, with the principles applied by EBA and ECB, that defining an adequate view on the time horizon is particularly important. Risks can unfold in very different time paths, which will usually deviate from the two- to three-year horizons that banks typically use for their capital planning, but also that climate-related risks can intensify suddenly and in unpredictable ways.

In accordance with the EBA's elaborate findings in this respect, the Basel Committee draws attention to the fact that methodologies to measure the actual (financial) impact of risks have yet to be developed to a far-reaching degree and that data and information in the context of those assessments are not available in advance, an important signalling of the potential hurdles that may impede adequate risk management.

With the ECB, the Basel Committee advocates that banks should pick up this gauntlet and invest in developing and improving methodologies.[67] In my view, what pinches here is the Basel Committee's orientation towards existing standards in terms of risk management and the quantification of risks through the usual techniques for estimating financial losses. As I will argue in further parts of this chapter, there is every reason to reconsider whether risk estimates should be based on existing methodologies and their underlying assumptions of far-reaching objectification based on available statistical data.

9.2.5.3 Twelve Principles for Banks

The first 12 principles of the 2022 BSCB Principles are addressed to banks. The first three principles concern corporate governance in banks and are similar in nature to the principles set out by the ECB and EBA. In the second principle, the Basel Committee draws attention to the organisation of risk management within banking organisations. More than the EBA and ECB seem to do, the Basel Committee advocates the creation of an additional governance function focused on climate risk management and the creation of separate organisational components within the hierarchical organisational model.[68]

Like the ECB, the Basel Committee advocates in the fourth principle that climate risk management should be embedded in the 'three lines of defence' model, with a separate role for independent risk management

[67] See Paragraphs 9 and 10 of the 2022 BCBS Principles.

[68] See Paragraphs 12 to 18 of the 2022 BCBS Principles.

and compliance functions in the second line and separate and independent review of the effectiveness of the risk management organisation and controls by a separate internal audit function in the third line.[69]

The fifth principle is about banks' capital and liquidity adequacy tests, where the Basel Committee basically assumes that within the ICAAP and ILAAP process, there should be a recalibration of the applied time horizon when looking ahead to capital and liquidity developments. After all, as mentioned above, climate risks may manifest themselves over a longer period than is usually measured when developing strategies on capital and liquidity adequacy (usually a dimension of two to three years for capital, and liquidity even shorter [in fact, banks use the time horizon prescribed by legislation for monitoring key liquidity ratios, namely one year based on the so-called Net Stable Funding Ratio (NSFR)]).[70] On this front, the Basel Committee argues that incorporating analyses of the financial impact of climate-related risks into capital and liquidity planning is likely to require a longer transition period, due to the lack of sufficient calculation methods and the lack of adequate data.[71]

Principle six deals with the risk management process, principle seven with (internal) management reporting and principles eight to twelve express principles for the establishment of separate estimation methods for credit risk, market risk, operational risk, liquidity risk and other risks. Similar to the EBA and ECB policy papers discussed above, the Basel Committee also draws attention to the potential reputational effects for banks and the risk of (external) litigation in relation to 'climate-sensitive' investments and (doing business with) companies that are in the spotlight in this regard.[72]

[69] See Paragraphs 19 to 22 of the 2022 BCBS Principles.

[70] Regarding the NSFR regime, see the provisions of Title IV, Sixth Part CRR.

[71] See Paragraphs 23 to 26 of the 2022 BCBS Principles. In this regard, the Basel Committee makes the following important statement: "It is recognised that climate-related financial risks will probably be incorporated into banks' internal capital and liquidity adequacy assessments iteratively and progressively, as the methodologies and data used to analyse these risks continue to mature over time and analytical gaps are addressed. To this end, banks should start building risk analysis capabilities by identifying relevant climate-related risk drivers that may materially impair their financial condition, developing key risk indicators and metrics to quantify exposures to these risks, and assessing the links between climate-related financial risks and traditional financial risk types such as credit and liquidity risks."

[72] See Paragraphs 26 to 43 of the 2022 BCBS Principles.

The last and twelfth principle is about the adequate application of scenario analysis, and internal stress testing. This has also proved to be an important issue for EBA, and the ECB as briefly touched upon above. Such scenario analyses and stress testing should, subject to a sufficiently broad time horizon, expose any significant impact on the bank's financial-economic condition and resilience to (mainly) external shocks.[73]

9.2.5.4 The Role of the Regulator

Principles 13 to 18 deal with the dialogue between banks and their supervisors and how climate-related risks can be included in the regular frameworks of bank supervision. Unlike what we see in the EU, the Basel Committee is considerably less adamant in prioritising the possible sanction that supervisors can apply in case of inadequate risk management. In this, the Basel Committee opts for a more subdued plea for effective supervision, without immediately attaching the far-reaching consequences that banks should be encouraged to make improvements through so-called Piller 2 capital surcharges.[74]

As mentioned above, the ECB in particular sees the creation of the 2022 BCBS Principles as a much-needed addition to the formal framework supporting climate-related and environmental risk oversight. Many of the texts from this important Basel Committee document will be recognisable and support the work undertaken in the EU by the EBA and ECB. However, more than the European institutions have put forward in this area, the Basel Committee calls attention to the limitations of current methodologies for estimating financial and economic risks as well as the lack of reliable data and information.

[73] See Paragraphs 44 to 48 of the 2022 BCBS Principles. The discussion of this principle concludes with the following Basel Committee observation: "The field of climate scenario analysis is highly dynamic, and practices are expected to evolve rapidly, especially as climate science advances. Climate scenario models, frameworks and results should be subject to challenge and regular review by a range of internal and/or external experts and independent functions." Attention is drawn to the advancing understanding of climate science, and the rapid changes occurring in this field, an extremely complex matter for banks that also requires in-depth investment in the know how in this field, with the biggest challenge being to separate the wheat from the chaff within this field. Independent scientific research in this area is not abundant and not infrequently ideological motives and political pressure play an important role in this area.

[74] See Paragraphs 49 to 69 of the 2022 BCBS Principles.

Regarding support in formal law frameworks, developments are accelerating in the EU, in particular due to the inclusion of concrete provisions in the text of the CRD4 as a result of the proposals of the Banking Package 2021. This is discussed further below.

9.2.6 The New Rules Arising from CRD6

9.2.6.1 Introduction

The EU has great ambitions to involve the private sector in financing the fight against the effects of climate change and to provide that society and the real economy can adapt to it. To ensure that related developing climate-related risks remain as small as possible and the risk to financial stability is adequately managed, the European legislator is convinced that this requires additional prudential legislation. The current legal requirements are not sufficient in this respect.[75] In the Banking Package 2021, firstly, a fundamental amendment to CRD4 has been proposed in this respect, leading to the introduction of new provisions in this directive, which is so important for the banking sector. In this section, we discuss the additions in the area of qualitative risk management by banks, both in terms of their own internal design of risk management and the supervisory review framework as a result of the SREP and the organisation in the EU of stress tests focused on climate and environmental risks.

9.2.6.2 CRR Definitions of Environmental, Social and Governance Risk

It is important to note first the introduction of a new definition of 'environmental, social and governance risk' which is introduced within the directive text through a cross-reference in new Article 3(1)(69) CRD4 to the definition in Article 4(1)(52d) CRR. The new definition in CRR reads as follows:

> "the risk of losses arising from any negative financial impact on the institution stemming from the current or prospective impacts of environmental, social or governance (ESG) factors on the institution's counterparties or invested assets".

[75] See Paragraph 2 of Chapter I (Background to the Proposal) which includes an explanation of this point from the European Commission to the CRD6 proposal (footnote 12 shows the full reference to this legislative proposal).

Within that definition, it is still important to give attention in the context of this chapter in which we particularly focus on the 'E' of ESG jargon to the definition of 'environmental risk' of Article 4(1)(52e) CRR:

> "the risk of losses arising from any negative financial impact on the institution stemming from the current or prospective impacts of environmental factors on the institution's counterparties or invested assets, including factors related to the transition towards the following environmental objectives:
>
> (a) climate change mitigation;
> (b) climate change adaptation;
> (c) the sustainable use and protection of water and marine resources;
> (d) the transition to a circular economy;
> (e) pollution prevention and control;
> (f) the protection and restoration of biodiversity and ecosystems.
>
> Environmental risk includes both physical risk and transition risk";

Separate definitions of 'physical risk' and 'transition risk' were added to Article 4(1) CRR:

> "(52f) 'physical risk', as part of the overall environmental risk, means the risk of losses arising from any negative financial impact on the institution stemming from the current or prospective impacts of the physical effects of environmental factors on the institution's counterparties or invested assets;
> (52g) 'Transition risk,' as part of the overall environmental risk, means the risk of losses arising from any negative financial impact on the institution stemming from the current or prospective impacts of the transition of business activities and sectors to an environmentally sustainable economy on the institution's counterparties or invested assets."

Integral representation of these definitions is important because the definition of 'environmental, social and governance risk' is constantly referred to in the provisions of the CRD5 to be introduced or amended.

These definitions by the legislator differ from those in the 2021 EBA ESG Report, as discussed in Sect. 9.2.4, in particular the definition of physical risks. The definition included in Article 4(1)(52f) CRR clarifies that for physical risks, the element of 'losses' should be a material part of the adverse financial impact, which in its nature provides a more useful

concept. In my view, the CRR definitions of transition and physical risks provide more guidance on what banks' risk management should be about.

It is also noticeable in the definitions reproduced above that the generic text of Article 4(1)(52d) CRR also includes social and governance factors, which also differs from the definitions currently used by EBA and the ECB in the guidelines and reports mentioned above. Therein, the focus is on the concrete treatment of climate and environmental risks, recognising that around these, the most tangible and provable risks can currently be identified, and risk assessments made.

The following is an Article-by-Article discussion of the provisions of the CRD5 to be amended.

9.2.6.3 Bank-Focused Risk Management Provisions

In the first paragraph of Article 73 CRD4, the existing text is replaced with the following:

> Institutions shall have in place sound, effective and comprehensive strategies and processes to assess and maintain on an ongoing basis the amounts, types and distribution of internal capital that they consider adequate to cover the nature and level of the risks to which they are or might be exposed in *the short-, medium- and long-term time horizon, including environmental, social and governance risks.* [emphasis. BJO]

What first stands out here is the introduction of a new 'future perspective' to be used for estimating future risks, whereby, in line with the recommendations set out by EBA, the ECB and the Basel Committee, banks are expected to include a much wider time span in their risk analyses, partly because of the estimation that climate and environmental risks may also manifest themselves in the much longer term. This significantly extends the two- to three-year horizon customarily applied in practice for estimating possible future risks, whilst a one 12 months 'internal' horizon is often supplemented with an extended two- to three-year horizon based on forward looking (internal and supervisory) stress tests.[76]

[76] Riso, ibid., p. 284 refers to this important topic, and noted "Although the Basel framework is well-designed to address various sources of risks for banks, including sustainability risks, climate change could be considered as an opportunity to broaden the horizons of the prudential framework to combine the current short-term risk management tools with other tools to understand and manage longer-term risks."

The second point standing out in this revised provision of the CRD4 concerns the making explicit of environmental, social and governance risks, which, in addition to the traditional risks in banks' business operations, are assumed to be able to exert a significant influence on the (required) capital position. The reference to 'internal capital' in this provision, incidentally, refers to so-called 'economic capital,' which, in addition to the fulfilment of the minimum capital requirements as derived from legislation, also concerns an estimate of the bank's capital needs in the light of the risks identified (internally) by management, including risks that may not be covered by the mandatory regulatory requirements.

The existing first paragraph of Article 74 CRD4 is significantly amended by regulating therein the mandatory (robust) governance arrangements that banks are required to maintain with additional enhancements, not only with regard to the governance arrangements in terms of environmental, social and governance risks, but also by including the aforementioned long-time horizon (without making this horizon explicit in this provision) as a part of the risk management organisation to be maintained.

Article 76 CRD4 is complemented by the orientation on environmental, social and governance risks with regard to the mandatory periodic (i.e., at least bi-annual) review by the 'management body' of the bank's existing risk management policy frameworks and the underlying strategic risk analysis and definition of risk appetite. The longer time horizon of the policy framework is added to this as well. In the second paragraph of Article 76 CRD4, the following relevant new text is added:

> Member States shall ensure that the management body develops specific plans and quantifiable targets to monitor and address the risks arising in the short, medium and long-term from the misalignment of the business model and strategy of the institutions, with the relevant Union policy objectives or broader transition trends towards a sustainable economy in relation to environmental, social and governance factors.

With this addition, the legislator also intends to oblige banks to draft transition plans and properly align them with further developments in this area in the EU context. In other words, this contains an implicit reference to the broader objectives of the European institutions in relation to Europe's compliance with the commitments as stemming from the Paris Agreement. Banks are expected to strategically develop plans to achieve

so-called 'Paris Alignment,' which could, for instance, have implications for client underwriting processes, but also especially in terms of product and service development.

9.2.6.4 Review of Risk Management by Competent Authority

An important expanded provision is added to the current text of the CRD4 related to the design of the SREP in Article 87a on how supervisors should supervise the design, operation and effectiveness of banks' risk management concerning environmental, social and governance risks. The first paragraph of this new Article reads:

> Competent authorities shall ensure that institutions have, as part of their robust governance arrangements including risk management framework required under Article 74(1), robust strategies, policies, processes and systems for the identification, measurement, management and monitoring of environmental, social and governance risks over an appropriate set of time horizons.

This provision emphasises that the supervision of banks' risk management organisation extends over the entire chain, starting from strategic risk management, the identification of risks, the associated data management as to be embedded in banks' existing information management, the impact analysis of environmental, social and governance risks and finally the management of these risks.

It is important to note that the legal provision also confirms, with some emphasis, that this risk management organisation should be designed around different time horizons, referring to the short-, medium- and long-term dimension considered appropriate for this risk type. In other words, this is where the recommendations of EBA, the ECB and the Basel Committee resonate. The second paragraph further specifies this, also defining a minimum time horizon of 10 years. This is a very far-reaching obligation imposed on banks, bearing in mind that when designing risk management, banks typically look ahead two to three years.

Such time horizons are currently used because it is considered unwise and imprudent to speculate too much about the more distant future and developments that may take place therein. Banks are therefore forced by this provision to develop a new paradigm for the design of the risk management organisation. It cannot be expressed with sufficient force

of words that this new regulation represents a very profound change for banks.

The second paragraph of the new Article 87a also frames the exercise of supervisory powers according to the principle of proportionality, confirming that supervisors should consider the size, nature and complexity of environmental, social and governance risks of the bank's business model and the scope of the bank's activities. This also does justice to the orientation of supervision advocated by the EBA and ECB according to the bank's individual business model. For example, the type of clients or the geographical location of the bank's activities may or may not lead to qualifying circumstances in terms of environmental, social and governance risks. In short, one bank is not the other in terms of these risks, and supervisors should tailor their supervision in this area to the different circumstances that may be present at banks.

Banks should, pursuant to the third paragraph, and taking into account the different time horizons provided for in the second paragraph of Article 87a CRD4, ensure scenario analyses (stress tests), testing the bank's resilience against long-term adverse effects of environmental, social and governance risks. In doing so, banks should assume different scenarios, baseline and adverse scenarios, and to begin with, these should include climate-related risks. Those scenarios should also address transition risk, with the legal regime explicitly referring to effects of environmental and social changes and related government policies on the business environment.

This is a rather political stance by the legislator, encouraging banks, as it were, to factor the negative financial consequences of changed views on the desirability of financing or investing in environmentally unfriendly investments or companies into their long-term vision in terms of the financial soundness of the company. As far as I am concerned, this does very much echo the voice of an activist ideologically driven legislator, and uses (or, if you like, abuses) the design of risk management supervision to engage in market regulation.

The fourth paragraph of the new Article 87a CRD4 includes a comprehensive provision on the need for banks, as part of their risk management, to also draw up transition plans and their supervision by the supervisor, with the supervisor expected to measure the progress made and the risks involved:

> "Competent authorities shall assess and monitor developments of institutions' practices concerning their environmental, social and governance strategy and risk management, including the plans to be prepared in accordance with Article 76, as well as the progress made and the risks to adapt their business models to the relevant policy objectives of the Union or broader transition trends towards a sustainable economy, taking into account sustainability related product offering, transition finance policies, related loan origination policies, and environmental, social and governance related targets and limits".

Again, one may question to what extent this arrangement is appropriate in the context of risk management rules. In any case, in my opinion, it is not sufficiently clear, to what extent the absence of an (according to the policy objectives of the (European) legislator covenant or appropriate) transition plan of an individual bank could be risk-increasing. Here, the regulator is expected to act as market master, which in my view is an incorrect and undesirable development. Here, close attention should also be paid to how this provision is drafted. Supervisors are supposed to monitor the risk of the absence of a transition plan which meets relevant Union policy objectives, they are not supposed to monitor the risk of the absence of a transition plan itself.

I am not against being demanding when it comes to developing transition plans and the need to identify the risks associated with the absence of those transition plans or concrete risk management measures. But in my view, the rules discussed in this chapter around the design of banks' risk management organisation should be about policy-neutral identification and evaluation of risks, not the realisation of a broader political agenda. The danger I see is that this will push banks in a direction in terms of business strategy and objectives, of which it is highly uncertain whether the new direction will be risk-increasing or risk-reducing.

Under the fourth paragraph of the new Article 87a CRD4, EBA is mandated to issue guidelines on four topics. These include the following mandate:

> (a) "minimum standards and reference methodologies for the identification, measurement, management and monitoring of environmental, social and governance risks;
> (b) the content of plans to be prepared in accordance with Article 76, which shall include specific timelines and intermediate quantifiable

targets and milestones, in order to address the risks from misalignment of the business model and strategy of institutions with the relevant policy objectives of the Union, or broader transition trends towards a sustainable economy in relation to environmental, social and governance factors;

(c) qualitative and quantitative criteria for the assessment of the impact of environmental, social and governance risks on the financial stability of institutions in the short, medium and long term;

(d) criteria for setting the scenarios and methods referred to in paragraph 3, including the parameters and assumptions to be used in each of the scenarios and specific risks".

With the mandate described in (a), (c) and (d), one can imagine that such guidelines will be helpful in defining the route of march and will also be helpful to banks in developing effective risk management strategies and measures. In doing so, I do note that it should be hoped that the guidelines will adequately take into account the principle of proportionality, and do justice to the very different business models, client groups and other special individual circumstances, which will vary from bank to bank. In other words, it is very ambitious to assume that a 'one size fits all' approach will be able to work in this area. For that, the banking landscape is too heterogeneous, and the activities of different banks are very different from one another, so customisation in this area is called for.

I have more difficulty with the mandate presented in (b), which again has too strong a steering character in my opinion. Neither EBA nor the competent supervisors have democratic legitimacy to deal with such a far-reaching politically driven matter and to steer the banks concerned. If supervisors were to act as a guide here, it should be on the grounds that the lack of transition plans, in other words retaining certain products and services or retaining certain customers, has a proven risk-increasing effect, not ideologically, but financially and economically.

9.2.6.5 Political Negotiations on CRD6

I discussed in the preceding paragraphs the European Commission's proposal to amend some provisions of the CRD4 on the management of environmental, social and governance risks, as part of the 2021 Banking Package. These provisions are subject to fierce political debate amongst the European institutions, with the negotiating texts as released by the

European Council[77] and the consolidated mark-up of the input from various members of the European Parliament[78] showing that it is highly uncertain what the final wording of the provisions described above will be.

For instance, the European Council's proposal removes the test in Article 87a(2) CRD4 that the design of the risk management organisation should be based on a time horizon of at least 10 years. A number of amendments introduced by members of the European Parliament also delete this explicit 10-year period. This deletion was defended on the grounds that such a long-time horizon would create too much uncertainty for banks to conduct sound and effective risk analyses.

Other corrections made to the texts by both the European Council and some members of the European Parliament concern the above, also controversial in my view, mandate to EBA to issue guidelines on the extent to which banks have tilted their transition plans towards European Union political policy. In other words, the texts of Article 87a(4)(b) CRD4 on which I was critical above will most likely not be reflected in the final directive text.

What remains intact in the negotiations is the significant extension of the rules in terms of the design of banks' environmental, social and governance risk management and the obligation to draw up transition plans. And furthermore, supervisors will be given far-reaching powers to ensure that banks create a sound risk management organisation that addresses the various aspects of environmental, social and governance risks.

In June 2023, the trilogue discussions on the Banking Package 2021 review took place and provisional political agreement was reached on 27 June 2023.[79] The draft texts agreed upon are still subject to on-going technical adjustments and legal review as at the closure of this manuscript. From the informal confirmations retrieved from the results of the political agreement, the following observations may be made as regards the qualitative risk management topic as discussed in this section.

[77] Council of the European Union, Interinstitutional File: 2021/0341 (COD), 31 October 2022.

[78] European Parliament, ECON, 2021/0341(COD), Amendments 330–582, 22 August 2022.

[79] Council of the EU, Press release 27 June 2023, *Banking sector: Provisional agreement reached on the implementation of Basel III reforms*, www.consilium.europa.eu/en/press/press-releases/2023/06/27.

Going through the unofficial texts, I came to the observation that the final outcome of the political negotiations leaves the framework described above largely intact. In other words, there will be tightened rules for addressing ESG risks in the qualitative risk management organisation and the way banks factor their strategic risk analysis into risk policies, and risk management will become an important part of the SREP process. Furthermore, enhancements are laid down in the CRD5 provisions as to the mandatory obligations of banks to address transition risks in transition planning and to evaluate the impact of the transition in the longer term.

As much as it is difficult to fully grasp the final outcome of the political negotiations (partly because the technical and legal calibration of the negotiating texts is still in full swing at the time this manuscript is concluded), the binding obligation to observe a fixed legal horizon of 10 years in the risk analysis seems to have been swapped for a somewhat generic description of 'short, medium and long term,' so that there seems to be more room for banks to define themselves the time horizons against which the base line situation (the situation as it currently stands) is tested.

The texts also seem to prioritise climate-related factors as the most prominent risk factor to be factored into internal stress tests and internal risk analyses. Finally, it can be observed that the importance of the testing of transition plans remains paramount. However, further nuance can be observed here as, for instance, emphatic references to banks' obligations under the CSRD are included and there is an alignment of the rules of the CSRD with those of the steps and processes required under the CRD6 in terms of risk management.

9.2.7 Concluding Remarks

Along the lines of the model developed by supervisors and international organisations around risk factors and transmission channels, in this section, I gave two examples highlighting the extent to which the current Pillar 1 rules allow accurate and reliable estimates of (credit) risks. In doing so, I noted that it is not so easy to make reliable estimates in this area, with the current Pillar 1 rules standing in the way of making these estimates and weighting the actual risk.

Where the shoe pinches, in my opinion, is also the assumption that risk assessments in terms of environmental and climate risks should necessarily be based on existing frameworks in terms of risk assessment and quantification of the damage resulting from manifesting credit, market

and operational risks. The question is—and I also tried to point out above using an example in terms of 'transmission channels'—whether the existing rules do not get in the way in this respect.

The example I gave elaborated on the rules of Article 178 CRR, regarding the definition of the circumstances when a counterparty can be deemed to 'default,' which obliges the bank to make a provision in respect of loans outstanding against that counterparty, or even to write off the exposure entirely. Particularly with regard to credit risk and market risk assessments, banks are required to rely on objectively observed facts and circumstances or reliable statistical data to avoid the risk of the bank's management 'explaining away' a concrete risk based on a subjective assessment.

But the question is whether, in the absence of statistically relevant data, this method of risk estimation should not be questioned in its very nature. Instead of framing climate risks in the existing methodological frameworks for credit risk, market risk or operational risk, it might be wise to add a new risk category to the existing risk families, namely the climate risk category. Rather, the estimation of climate risks should then be based on 'stress-testing' where the scenarios of these stress tests are in line with the authoritative studies issued in this field, for example by the Intergovernmental Panel on Climate Change (IPCC).[80] This goes a long way towards bridging the struggle with current methodologies with an alternative method.

However, such an alternative risk assessment will need to have a basis in the laws and regulations that currently do not provide for it. Current rules assume that banks should fit their risk assessments into the usual methodologies, even though EBA also indicates that those methodologies may need to be adjusted. In doing so, EBA does not go so far as to say that such adjustment effectively amounts to an 'out-of-the-box' solution and believes that the current classification into the three risk categories (credit risk, market risk and operational risk) should be and remain the fundamental basis of future methodologies, including with regard to the assessment of environmental and climate risks.

I wanted to conclude this section by saying that I am by no means advocating inaction by banks in the sense that they could quietly wait until legislative and regulatory developments are more advanced. On the

[80] For the probability calculation method developed by the IPCC, see Synthesis Report of the IPCC, Sixth Assessment Report (AR6), available at www.ipcc.ch/report/ar6/syr.

contrary, I believe the banking sector should make heavy investments in developing refinements to existing risk measurement models and methodologies. Whilst some (large) banks have already made great strides in this area, others are only in the early stages of this development. I believe it is the responsibility of banks to proceed rigorously in this regard and to come up with well-founded risk analyses and corresponding risk management strategies. This is to prevent the climate crisis from also becoming a new financial crisis in due course because banks would be surprised by the tilt in the risk profile of their activities.

9.3 Pillar 1 Capital Requirements to Address ESG Risks

9.3.1 Introduction

The development of rules around Pillar 1 requirements, in other words what minimum capital or liquidity requirements apply to all banks in light of climate, environmental and social risks, is in its infancy. It could be said that there has been an evolution of thinking in this area. In the initial incitements to policy in relation to encouraging sustainable finance and the role banks should play in that regard, there was tentative exploration to seek those incentives in an easing of capital requirements through 'support factors.' However, those initial shoots were eventually reversed to the realisation that such green support factors (GSF) could potentially lead to an increase in risk, rather than a conducive outcome in terms of risk management.[81]

Thus, the original ideas of a GSF ended up in a somewhat watered-down and temporary arrangement in the new provisions of the CRR3 under the Banking Package 2021, by giving ESG risks a place in the

[81] See Riso, ibid., pp. 285–288. Critical notes in this respect have been issued by: Sini Matikainen, *Green doesn't mean risk-free: Why we should be cautious about a green supporting factor in the EU*, blogpost 18 December 2017 Grantham Research Institute on Climate Change and the Environment, LSE, www.lse.ac.uk/granthaminstitute/news/eu-green-supporting-factor-bank-risk and Dirk Schoenmakers and Arnoud Boot, *Climate change adds to risk for banks, but EU lending proposals will do more harm than good*, Bruegel Blog Post, 16 January 2018, www.bruegel.org/blog-post/climate-change-adds-risk-banks-eu-lending-proposals-will-do-more-harm-good, and Jens-Hinrich Binder, *Prudential requirements framework and sustainability*, working paper, latest published version dated 14 November 2022, EBI Working Paper Series 2022-No. 131. See www.ebi-europa.eu.

special risk assessment in respect of certain infrastructure financing (think of wind farms). But there is no longer a broad-based system of GSF.

Meanwhile, a new phase has begun in academia, but especially through the extensive work of the Network on Greening the Financial Sector (NGFS), the EBA's comprehensive discussion paper in May 2022 "The role of Environmental Risks in the Prudential Framework"[82] (2022 EBA ESG DP) and its recent report of October 2023 "On the Role of Environmental and Social Risks in the Prudential Framework"[83] (2023 EBA Prudential Framework Report), which amounts to a broad-based realisation that there is a need to fundamentally rethink the current Pillar 1 rules on capital requirements in order to move towards pricing ESG risks. In that momentum of observations in academia and the work of NGFS and EBA, a further step will be taken in the EU by eliciting an opinion from EBA on the necessary adjustments to the CRR. To this end, the CRR3 text on which political compromise agreement was reached in June 2023 includes a broadly written mandate for EBA to complete this important task.

We discuss these developments in detail in this Sect. 9.3.

9.3.2 Green Support Factors for Sustainable Finance

9.3.2.1 Incentivising Sustainable Finance

There has been much debate in recent years about the extent to which prudential rules (capital adequacy supervision or liquidity supervision) would stand in the way of facilitating the shifting of funding flows to more sustainable financing. In other words, does financing in sustainable projects or investing in them lead to more prohibitive requirements that would therefore discourage financiers or banks from engaging in such sustainable financing? In a policy context, there have been calls for a GSF, i.e., an exemption or reduction in prudential requirements for certain types of financing that qualify as sustainable.

The debate in the EU regarding the GSF began with the extensive observations on it by the High-Level Expert Group on Sustainable

[82] EBA, DP/2022/02 of 2 May 2022.

[83] EBA/REP/2023/34, October 2023 published on 13 October 2023.

Finance (HLEG) in its January 2018 report.[84] The HLEG sees the GSF as an important addition to the policy toolbox to promote the shift from traditional finance flows to sustainable finance. In this context, it also refers to statements made by European Commission Vice-President Dombrovskis at the One Planet Summit in Paris on 12 December 2017.

In the 2022 EBA ESG DP, EBA already preliminarily concluded that the EU is better off going down the route of further refining the existing rules of the prudential framework, than that it is necessary (or prudent) to come up with a generic GSF for exposures based on sustainability objectives.[85]

In 2023 EBA Prudential Framework Report, EBA has been drawing final conclusions in respect of the GSF. Based on its further research to the arguments for and against a GSF, the EBA recommends in the 2023 EBA Prudential Framework Report not to pursue the development of a framework in the EU for GSF or a penalising polluting factor for that matter. EBA concluded as follows:

> "Considering the balance of arguments presented above, the EBA does not recommend introducing environment-related adjustment factors at this point. From a prudential point of view, challenging conditions should be met before adjustment factors could be justified, which is not the case at this stage. These conditions include (i) acquiring clear evidence that certain assets display distinct risk profiles due to environmental risk drivers, (ii) establishing that the framework cannot capture these risk drivers, (iii) overcoming classification challenges which currently hinder the identification

[84] *Financing a Sustainable European Economy*, Final Report 2018 by the High-Level Expert Group on Sustainable Finance, pp. 67 and 68.

[85] EBA argues on page 10 of Discussion Paper "As an alternative for recognising environmental risks within the structure of the framework (the prudential rules mainly contained in CRR and the Investment Firm Regulation (Regulation (EU) 2019/2033), *add*. BJO), the potential introduction of specific risk-weighted adjustment factors is considered. The initial analysis indicates that targeted amendments to the existing prudential requirements would address these risks more accurately than such adjustment factors, given the various challenges associated with their design and implementation." See: Jens-Hinrich Binder, *Prudential requirements framework and sustainability*, working paper, latest published version dated 14 November 2022, EBI Working Paper Series 2022-No. 131, who is extremely gloomy about the risks that such a green support factor could entail, also pointing to possible consequences for financial stability.

> of exposures to which adjustment factors could apply118, and (iv) benefitting from a high-enough degree of comfort on impacts and potential unintended effects.
>
> Adjustment factors face both conceptual (e.g., overlap with existing Pillar 1 mechanisms) and operational challenges (e.g., calibration, need for international cooperation, granularity needed to differentiate exposures and capture forward-looking aspects such as individual transition plans) that complicate their design and implementation. The lack of strong evidence, data and methodologies for identifying and quantifying environmental risk drivers at this point in time would likely make the determination of the scope and size of adjustment factors uncertain.
>
> Overall, it is key to ensure that the calculation of RWAs is not distorted and to maintain risk-based capital requirements which fulfil their function as safeguards against unexpected losses. The most consistent way forward from a prudential risk-based perspective is therefore to address environmental risk drivers through effective use of and targeted amendments to the existing prudential regime rather than through dedicated treatments such as supporting or penalising factors."[86]

EBA's very comprehensive analysis in this area is extremely worth reading through. The argument around the lack of risk sensitivity of special factors that are supposed to support green financing, but also the risk that the negative polluting penalising factor cannot entail a real risk assessment of increased risk either resonates with the observations I wanted to make earlier in this chapter. In this respect, based on the current methodologies and rules, there is in fact too weak a basis to give free rein to the GSF or the opposite penalising factor, also referring in particular to my reflections on the issue of establishing the presence of a default situation, based on the rules of Article 178 CRR.

9.3.2.2 Support Factor Framework of CRR3

In 2018, the HLEG[87] cautioned that care must be taken to ensure that the capital requirements under development for banks do not hinder banks' willingness to participate in the necessary transition of funding markets towards sustainable finance. Notably mentioned there were concerns about the effects of the Basel III framework for long-term funding, where the latest capital requirements for banks are more likely

[86] Paragraphs 120–122 of the 2023 EBA Prudential Framework Report.

[87] HLEG, ibid., p. 67.

to encourage a shortening of funding maturities. This would then particularly affect so-called specialised lending, project finance and real estate finance markets.

In fact, the topic of specialised lending and the issues surrounding the financial sector's involvement in sustainability project finance have been on the agenda for many years. Shortly after the introduction of the new Solvency II rules for insurers, in 2016, an attempt was made to come up with a framework that was supposed to promote infrastructure financing and investment by insurers.[88] The complex rules introduced as a result have, in my view, stood in the way of opening up these markets for insurers.

The aforementioned concerns that the HLEG wrote down in the 2018 report were based on an inventory of bottlenecks as identified by the industry. This has also prompted a gradual move towards temporary rules in this area, which will be introduced as part of the 2021 Banking Package. This is a temporary arrangement, pending the final changes to the CRR rules on risk weighting of special lending on the basis of the final draft rules to be issued by EBA. It is worth noting, however, that the 2023 EBA Prudential Framework Report, in particular, already provides direction on this. We will briefly touch upon the relevant parts of that report in the closing sections of this chapter. It is now important to briefly consider the regime of CRR3, as soon to be finalised, which should lead to the introduction of the temporary regime.

The 2021 proposal of the European Commission for revisions to the CRR as part of the Banking Package 2021 introduced a dedicated specialised lending exposure class with bespoke risk weights for 'project finance,' 'object finance' and 'commodities finance' in the rules for the so-called 'standardised approach' for risk weighting of credit risk. Such new exposure class allows for the catering of specific features of such specialised lending and to refine the risk weighting of such separate exposure class to deviate from the current rules that customarily treat such exposures as if they are to categorise as either ordinary 'corporate exposures' or per se high risk exposures with additional risk weights. It was considered

[88] Commission Delegated Regulation (EU) 2016/467 of 30 September 2015 amending Commission Delegated Regulation (EU) 2015/35 concerning the calculation of regulatory capital requirements for several categories of assets held by insurance and reinsurance undertakings *OJEU* L 85, pp. 6–19.

that a better risk sensitive regime is appropriate to address the specialised lending exposure class.

The resulting new regime is laid down in Article 122a CRR3, making distinctions between the above mentioned three types of specialised lending. Now in connection with sustainable finance, a certain beneficial treatment may be obtained for which a directly applicable credit assessment is not available (unrated exposures) in respect of certain project finance objects typically applied to finance infrastructure projects or sustainable projects, such as solar-farms, windmill farms or infrastructure and production facilities for hydrogen. This regime is reflected in the new provision of Article 122a(3)(c) CRR3. This provision allows a lower risk weight of 80% (for exposures to an operational project) if certain criteria are met. These criteria are very similar to the rules introduced in 2016, for insurance, undertakings as a result of the revisions to Delegated Regulation (EU) 2015/35.[89]

To summarise the relevant criteria, the lower risk weight may be applied in circumstances where the financed project is an income-generating project (for instance, one could think of the sales price of produced electricity or hydrogen or the transportation fees for such commodities over the infrastructural grid) and such income is generated from highly creditworthy debtors, such as a central government, a regional government or local authority being 0% risk weighted. Typically, the 'counterparties' are creditworthy income producers for the project and may be considered to be counterparties involved in distribution schemes for electricity or other clean energies.

Via the backdoor of this specific regime for specialised lending, and particularly for certain qualifying project finance, the EU introduced some (moderate) GSF for long-term exposures of banks providing finance to sustainable projects. It is all based on vague rule-making, where the support to achieve ESG objectives is somewhat less easy to derive from the relevant rules, but if one delves into the background and how the rules could be applied in the case of sustainable (infrastructure) finance (especially if one considers the background of the analogous rules for insurers as introduced in 2016), then a forethoughtful conclusion can be drawn that already at this stage, there has been some account of the need to

[89] See the previous footnote for the reference to the legislative act concerned.

support sustainable finance by providing rules for the specific prudential treatment.

It may be expected that the rules as proposed to be laid down in the CRR3 will have a more significant impact if applied in the lending practice by banks than the comparable rules had for the insurance industry when a similar regime was introduced in 2016. This is related to the fact that the banking industry is more experienced in setting up structured finance projects similar to the structures contemplated by the new rules of Article 122a(3)(c) CRR3.

9.3.3 Studies of the Network on Greening the Financial Sector (NGFS)

9.3.3.1 Introduction

The Central Banks and Supervisors Network for Greening the Financial System (NGFS) was established in December 2017 at the initiative of a number of European and international central banks and promotes itself as "Coalition of the willing, gathering Central Banks and Supervisors, working on climate and green finance issues."[90] The NGFS promotes the development of research, data gathering, scenario development, methodologies and standards in connection with climate and green finance issues and the relationship with the product and services offering, internal organisation and governance and risk management of the financial sector. Many projects of the NGFS concern the consideration of microprudential and macroprudential topics in connection with climate change and the necessary actions central banks, financial sector businesses and governments are to take to meet sustainability goals and alignment to the Paris Agreement of 2015.[91]

Amongst the many other initiatives, the NGFS also completed a subproject on the inventory of methodologies to arrive at a 'pricing' of

[90] See: www.ngfs.net/en.

[91] NGFS formulates its governance as being "willing, on a voluntary basis, to exchange experiences, share best practices, contribute to the development of environment and climate risk management in the financial sector, and to mobilize mainstream finance to support the transition toward a sustainable economy. Its purpose is to define and promote best practices to be implemented within and outside of the Membership of the NGFS and to conduct or commission analytical work on green finance." See: www.ngfs.net/en/page-sommaire/governance.

climate risks and the consequences this should have for existing methodologies to arrive at risk weighting of exposures of banks (and other financing parties). The following sub-section will provide a brief reflection on one expert report contained in this inventory.

9.3.3.2 The Expert Opinion Reports Organised by the NGFS

The Occasional Paper "Case studies of Environmental Risk Analysis Methodologies" was issued by the NGFS in September 2020.[92] This Occasional Paper charts the Environmental Risk Analysis (ERA) methodologies developed by a large group of experts who have advised the NGFS on a commissioned basis for this purpose. The Occasional Paper is divided into four Chapters, namely: Chapter I covers the ERA for banks, Chapter II the ERA for Institutional Investors and Insurers, Chapter III the ESG Index and Rating Methodologies and Chapter IV Cross-Cutting Issues. We only cover the ERA for banks in this chapter.

I discuss one of the nine methodologies provided. The remaining eight opinions and studies concern subtopics in the context of risk assessments to be made by banks, for example, a methodology that maps out how banks should estimate loans granted to thermal power plants. The somewhat broader methodology concerns that of Oliver Wyman, the US consultant who plays key advisory roles in the European banking sector.

The Oliver Wyman study is laid out in Chapter 3 of NGFS' Occasional Paper entitled "Assessing Credit Risk in a Changing Climate: Transition-Related Risks in Corporate Lending Portfolios" (OW Methodology). It zooms in on an estimation method for assessing the creditworthiness of companies to which loans have been extended by banks. The OW Methodology first notes that in the absence of (reliable) data on the impact of corporate transition plans to make climate risks manageable, a specific analysis needs to be developed. The OW Methodology combines a 'bottom up' analysis of the financial condition of the companies in question with a 'top-down' analysis that performs a specific stress test over the entire as-applied credit portfolio based on climate science, "even in

[92] NGFS 9 October 2020, see: www.ngfs.net/en/case-studies-environmental-risk-analysis-methodologies.

the context of limitations in data or time and resources."[93] The model developed is represented in a diagrammatic overview (see Fig. 9.3).[94]

The bottom-up module assumes a sufficiently representative sample in the corporate credit portfolio of available data on the creditworthiness profile of the sampled group of companies. As a result, the sample enables an analysis of the entire credit portfolio, including companies for which no or less relevant data are available, e.g., companies where no external or internal rating of creditworthiness is available.

Then, the top-down module is added to the analysis, based on generic scenarios that map, for example, investments in a reduction of CO_2 emissions, not so much at individual company level, but a general estimation of (average) costs based on climate science.[95] The combination of data leads to an adjustment of the estimate of the probability of default (PD),

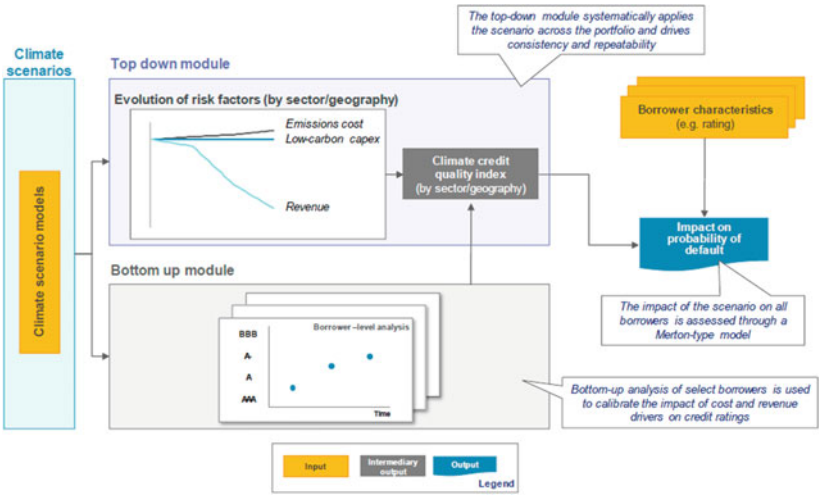

Fig. 9.3 Diagrammatic overview of the Oliver Wyman Methodology

[93] NGFS Occasional Paper, ibid., p. 40.

[94] Diagram included on p. 41 of the NGFS Occasional Paper.

[95] As stated by Oliver Wyman: "Scenario analysis methodologies need to be compatible with a range of climate scenarios so that financial institutions can test several plausible 'hypothetical constructs' of the future, and make strategic decisions based on this analysis.

combining the individual data and the impact implied by the top-down estimates.

The OW Methodology then pursues the interpretation of the scenario analysis methodologies where a number of climate scenario models are being used to provide for the scenario analysis feedback, for instance, the OW Methodology relies on the Potsdam Institute for Climate Impact Research[96] models method to address transition risk and physical risk. This model gives an interesting reflection on the transmission channels that may impact the financial condition of corporate borrowers (see Fig. 9.4).[97]

The methodology assesses the climate risk impact in three steps: (i) first, the key drivers to translate impact of scenarios to the financial statements of corporate borrowers are being captured. One could think of

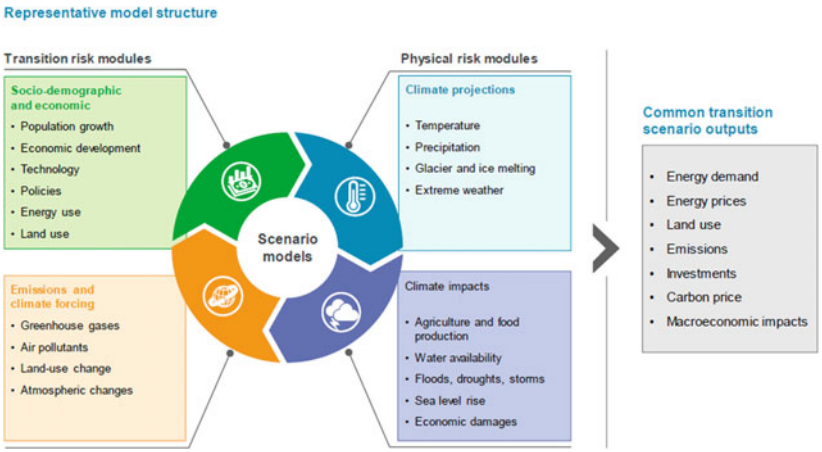

Fig. 9.4 Diagrammatic representation of the Potsdam Institute for Climate Impact Research models method (*Source* Potsdam Institute for Climate Impact Research [PIK])

When performing scenario analysis, we use two types of climate transition scenarios – temperature-based scenarios and event-based scenarios, […].” See: Page 42 of the NGFS Occasional Paper.

[96] See: www.pik-potsdam.de/en.

[97] Taken from the NGFS Occasional Paper, p. 43.

the influence on the cost of procurement of goods and services (so as to whether or not 'higher prices' may be expected from the impact of the scenarios), (ii) secondly, in the scenario adjusted financial statements are being established (for instance, the impact of higher prices on the income statement of the corporate borrower) and (iii) finally, a linkage between the rating model metrics and the scenario adjusted financial statements is being produced.

Essentially, the OW Methodology drives the reassessment of the (external or internal) ratings of customers of banks and the impact this has on the probability of default (PD). It attempts to recalibrate the existing basic risk metrics used to assess the risk weights attached to (groups of) borrowers with the scenario analysis regarding the impact of climate risks and the prediction that may be derived therefrom regarding changes in credit quality. The OW Methodology allows for a recurring 'stress-testing' of the entire portfolio of corporate credits, without the need for a counterparty-by-counterparty deep-dive in potential individual circumstances.

In fact, the OW Methodology provides, as it were, a metaphorical representation of the assumption that climate risks will have a predictable impact on the financial condition of banks' counterparties and that estimating their impact by banks deserves a clear priority, as has also been advocated by the supervisory community in the EU for many years.

We do the comprehensive model description by Oliver Wyman a disservice by providing some summaries here, but we thought this credible thinking framework was worth reproducing, thus also underscoring that early work has already been done by the industry to create thinking frameworks that can help further develop the recalibration of various bank capital requirements. The OW Methodology also lends strength to the comprehensive work of the NGFS, of which we display only a fragment of the extensive studies and best practices worked out within this group of central banks.

Displaying the OW Methodology also brings some perspective. After all, as much as this model provides interesting food for thought to arrive at a reasoned recalibration of the probability of default due to the manifestation of climate risk or the impact that transition planning may entail, it is obviously only a limited analysis that has left other risk parameters (such as the final 'exposure at default' or the 'loss given default') untouched. Furthermore, the OW Methodology only addresses the issue of impact on credit risk but mentions with a generic comment that the methodology

can also be applied to other risk categories, such as market risk, without going into further detail.[98]

We will see below that the EBA studies in this area contain a much more comprehensive analysis and will lead to a broader focus on all relevant components of the capital adequacy regime.

9.3.4 Environmental and Social Risks in the European Prudential Framework

9.3.4.1 Introduction

The May 2022 EBA DP had been published pursuant to the relevant mandate of, amongst others, Article 501c CRR. It is interesting to note that even though EBA's mandate has been enshrined in temporary regulations and in the CRR3 that is yet to be enacted and enter into force, it has not stood in the way of a very energetic EBA that has produced a number of studies in this area and has in fact already completed its preparations for implementing the CRR3 mandate. EBA will therefore soon be able to come up with follow-up steps in this area.

It is a somewhat confusing evolution if one considers the creation of the EBA mandate as contained in Article 501c CRR. Already on the occasion of the CRR2 texts of 2019 (Regulation (EU) 2019/878), EBA was mandated, in close cooperation with the European Systemic Risk Board (ESRB), to further identify the necessary adjustments to the CRR in order to take into account the changes in risks for banks as a result of developments in sustainability, with EBA having to reflect on the recommendations of the HLEG. That mandate assumed that EBA would not need to come up with its recommendations before 2025. Notwithstanding that leeway given at the time, the initial work and explorations have already been delivered in 2022 with the May 2022 EBA DP. Another significant step was taken recently in October 2023 with the 2023 EBA Prudential Framework Report.

[98] On p. 41 of the NGFS Occasional Paper, Oliver Wyman noted: "The methodology described in this chapter is designed to be compatible with a wide range of climate scenarios. While it is focused on credit exposures and risks, the same methodology can be applied for other asset classes, such as equity investments, and outside of the financial services industry, for instance by corporates who would like to quantify their business exposure to climate transition risk."

The final mandate text as is agreed upon in June 2023 with the adoption of the Political Comprise on the Banking Package 2021 is presented as an expansion of the mandate and shortens the timelines as originally contemplated in the CRR2 to a three phased deadline approach.

By *31 December 2023*, EBA is expected to publish a report on the targeted enhancements that could be considered within the current prudential framework and the possible additional and more comprehensive revisions to the framework that should be considered, taking into consideration the developments agreed at international level by the Basel Committee.

By *31 December 2024*, EBA is expected to report "on the availability and accessibility of reliable and consistent ESG data for each exposure class determined in accordance with Title II of Part Three of the CRR (the credit risk framework, *add*. BJO)" and "on the feasibility (in consultation with EIOPA) of introducing a standardised methodology to identify and qualify the exposures, for each exposure class determined in accordance with Title II of Part Three, based on a common set of principles to ESG risk classification, using the information on transition risk and physical risk indicators made available by sustainability disclosure reporting frameworks adopted in the European Union and where available internationally, the guidance and conclusions coming from the supervisory stress-testing or scenario analysis of climate-related financial risks conducted by the EBA or the competent authorities and if appropriately reflecting ESG risks, the relevant ESG score or the External Credit Assessment Institutions (ECAI's, the external commercial credit rating agencies, *add*. BJO) credit risks rating by a nominated ECAI."

By *31 December 2025*, EBA is expected to report on "the effective riskiness of exposures related to assets and activities subject to impacts from environmental and/or social factors compared to the riskiness of other exposures and the possible additional and more comprehensive revisions to the framework that could be considered, taking into consideration the developments agreed at international level by the Basel Committee," and "the potential short, medium and long-term effects on adjusted dedicated prudential treatment of exposures related to assets and activities subject to impacts from environmental and/or social factors on financial stability and bank lending in the Union."

What can be observed in any case is a significant expansion of the description of the mandate to be provided to EBA, compared to the texts of the original 2019 mandate as laid down in Article 501c CRR. In other

words, the amendment of that provision as a result of the soon-to-be-introduced CRR3 will also lead to a significant expansion of the necessary studies by EBA. Particularly notable are the reference to possible further developments at Basel Committee level, the concrete references to the information and data derived from sustainability reporting coming from banks' 'real economy' clients and the reference to possible ESG ratings from external commercial rating agencies. Moreover, the impact study is targeted at the implications for financial stability and the banking sector's ability to continue its lending to the real economy, in light of the new (capital) requirements as the last element of EBA's work, where it might be assumed that such impact studies should better be programmed at an earlier stage before the new arrangements and requirements are introduced.

As noted above, EBA has not been idle in developing analysis on the adjustments to Pillar 1 requirements for banks. In the extraordinarily admirable 2022 EBA ESG DP, the authority had already set an important tone on the vision it has on the elements that should be addressed in the adjustments to Pillar 1 requirements. This approach is then also reflected in the further recommendations as included in the 2023 EBA Prudential Framework Report.[99] For the sake of brevity and avoiding repetition, only the 2023 EBA Prudential Framework Report is discussed below. One could confirm that the 2023 EBA Prudential Framework Report delivers on the first part of the mandate granted to EBA in Article 501c CRR with the deadline of 31 December 2023. This is a peculiar development where the EBA anticipated on the yet to be adopted language of the final version of the CRR3.

[99] EBA addresses the place of the 2022 EBA ESG DP as follows in the 2023 report: "On 2 May 2022, the EBA published a DP, which initiated the discussion on the appropriateness of the current Pillar 1 framework to address those new risks. This report is the outcome of that reflection and represents the EBA's response to the mandate in Article 501c of Regulation (EU) No 575/2013, i.e., the CRR, and in Article 34 of Regulation (EU) 2019/2033, i.e., the IFR. It initiates a series of reports expected to be delivered over the upcoming years in accordance with CRR3 and complements past and ongoing EBA initiatives aiming to incorporate environmental risks – and more broadly ESG risks – across all pillars of the regulatory framework in line with the EBA's Roadmap on Sustainable Finance." See p. 9 of the 2023 EBA Prudential Framework Report.

9.3.4.2 *The Broader Conceptual Approach of Designing Pillar 1 Requirements*

Overall, EBA notes that environmental and social risks are changing the risk profile for the banking sector, noting that, unlike in the framework for qualitative risk management measures set out so far, EBA now prominently highlights 'social factors.' EBA also assumes that these risks will play a more important role in the near future.

They affect traditional categories of financial risks, such as credit, market and operational risks. Environmental and social factors can thus affect both the risks of individual institutions and the financial stability of the entire financial system. In the 2023 EBA Prudential Framework Report, EBA also calls attention to other risk categories, such as concentration risk.

A key chapter in this report also addresses the necessary adjustments to the prudential framework for investment firms, in particular, the refocus on the K-Factors for Risk-to-Market and Risk-to-Firm as laid down in the Investment Firm Regulation.[100] That chapter of the 2023 EBA Prudential Framework Report will not be discussed further below.

EBA recommends in the 2023 EBA Prudential Framework Report short-term measures to be taken over the next three years as part of the implementation of the revised CRR3/CRD6. EBA suggests:

- Include environmental risks as part of stress testing programmes under both the Internal Ratings Based (IRB) and Internal Model Approaches (IMA) under the Fundamental Review of the Trading Book (FRTB).
- Encourage the inclusion of environmental and social factors as part of external credit assessments by ECAIs (commercial credit rating agencies).
- Encourage the inclusion of social and environmental factors in due diligence requirements and property collateral valuations (real estate exposures, *add*. BJO).
- Require institutions to consider whether environmental and social factors give rise to losses due to operational risks.

[100] Regulation (EU) 2019/2033 of the European Parliament and of the Council of 27 November 2019 on the prudential requirements of investment firms and amending Regulations (EU) No 1093/2010, (EU) No 575/2013, (EU) No 600/2014 and (EU) No 806/2014 *OJEU* L 314, pp. 1–63.

- Progressively develop environment-related concentration risk metrics as part of supervisory reporting.[101]

From a medium- to long-term perspective (and therefore EBA anticipates on the delivery of the mandate of Article 501c CRR with the deadlines of 31 December 2024 and 31 December 2025), the 2023 EBA Prudential Framework Report also presents possible revisions to the Pillar 1 framework that reflect the increasing importance of environmental and social risks. These include:

- The possible use of scenario analysis to strengthen the forward-looking elements of the prudential framework.
- The role that transition plans could play in the future as part of the development of further risk-based improvements to the Pillar 1 framework.
- Reassessing the desirability of revising the IRB supervisory formula and corresponding standardised approach for credit risk to better account for elements of environmental risk.
- Introducing environmental concentration risk metrics under Pillar 1.[102]

To that extent EBA's approach, therefore, reflects a body of thought that amounts to first answering the fundamental question of whether the existing prudential framework should be adapted to take into account environmental and social factors, i.e., the question "*that it should be done*" is answered positively. EBA then announces that the '*how much*' of additional capital surcharges or liquidity measures will be answered at a later stage in the next phases of EBA's work to be delivered in the future. The topics of the 2023 EBA Prudential Framework Report to be discussed below in the following sub-sections thus deal in depth with the 'that' question rather than the 'how much' question yet.

Be that as it may, EBA's recent report deals with the 'temporary' fixes that have been floated in recent years as a method to move towards a better risk-sensitive approach, namely the adjustments made on the basis of supervisory stress tests carried out and the further mark-ups under buffer capital due to signalling of macroprudential impacts of climate

[101] Language derived from the press release of 13 October 2023 accompanying the 2023 EBA Prudential Framework Report, retrievable from www.eba.europa.eu.

[102] Language derived from the press release of 13 October 2023 accompanying the 2023 EBA Prudential Framework Report, retrievable from www.eba.europa.eu.

change and manifestation of social risks. The latter, however, is a new phenomenon because, as discussed in detail in Sect. 9.2, all studies and policy recommendations by the EBA, the ECB and the Basel Committee thus far delivered (particularly with respect to qualitative risk management policies) assume a focus on the 'E' of ESG rather than the 'S' and 'G.'

Hereinafter, we will briefly discuss the thirty-four policy recommendations of EBA set forth in the 2023 EBA Prudential Framework Report, differentiating between the short-term actions proposed and the medium- to long-term actions. We will address these policy recommendations following the same order in which they are discussed by EBA. In order to avoid that the discussion gets lost in translation we have developed tables for each of the policy recommendations, displaying the EBA language ad verbatim, and proposed some further analysis in the far-right column of each table.

9.3.4.3 ESG Risks and Relation to Credit Risk

As reflected in academic literature, but also in broader studies (such as those commissioned by the NGFS, as discussed above), assessing the credit risk implications of manifesting climate and environmental risks receives by far the most attention in the 2023 EBA Prudential Framework Report.[103] This attention is focused on both the 'standardised approach' and the Internal Ratings-Based (IRB) approach. The latter regime concerns banks that use their own models to estimate credit risk, either by using their own internal ratings-based estimation of the probability of default (PD) calculated risk or (in case banks apply the 'Advanced' IRB method) in addition their own modelled estimates of the 'exposure at default' (EaD) i.e. the amount actually outstanding in simulations of a 'default moment' and constituting the exposure in such a situation, taking into account interim repayments and similar payments that reduce the original amount of exposure as well as the amount of the 'loss given default' (LGD), i.e., the amount that the bank incurs as a true 'net' loss,

[103] EBA justifies this by referring to the fact that credit risk, of all risk categories, represents the largest proportion in capital requirements for European banks. In accordance with the supervisory data from the Common Reporting (COREP) feedback loop of June 2023 covering all banks in the European Union, credit risk (excluding securitisation exposures) represents 84% of the risk weighted assets (RWA) composition, 9.4% is operational risk, 3.2% is market risk, 2.3% other risk categories and 1.0% securitisation exposures. See 2023 EBA Prudential Framework Report, p. 27.

after taking into account the mitigating measures taken by the bank (e.g., collateral realised).

With the 'targeted enhancements' as contemplated in the 2023 EBA Prudential Framework Report, EBA seeks to develop a catalyst process to encourage banks to step up in making their own assessments as to the manifestation of risks related to environmental and social factors, in other words, the further development of processes in the internal risk management cycle in Pillar 2 on which we elaborated in Sect. 9.2. This does not mean that EBA will take a passive role in respect of the monitoring of developments in this respect. EBA proposes to strictly monitor in which manner banks do process the impact of environmental and social risks in so-called internal 'Expected Credit Loss' models on a forward-looking basis.

As to the *standardised approach rules for credit risk*, EBA proposed the policies included in Table 9.3.

The general takeaway from these recommendations in terms of the Standardised Approach to credit risk is that EBA is still in the probing phase in terms of concrete adjustments to the current framework. The framework for the Standardised Approach is still the main framework for credit risk estimates for the banking sector, as the vast majority of banks apply this approach. The IRB approach is reserved for a minority of (larger) banks in Europe.

As to the *internal ratings-based (IRB) methodologies* for assessing credit risk, the policies proposed by EBA are reflected in Table 9.4.

The reader will have noticed that as far as banks applying IRB methods are concerned, the recommendations have become much more concrete. This may be linked to the fact that EBA has also leaned on the inherently much more concrete policy rules that the Basel Committee proposed in the FAQ of December 2022 for IRB methods. Be that as it may, the legislative change agenda has been more concrete in this area than the policy recommendations for the standardised approach.

As to the methods of *collateral valuation* in respect of credit risk mitigation, relevant for both the standardised approaches and the internal rating-based methodologies, EBA proposed the policies outlined in Table 9.5.

As to the methods of applying the so-called *Adjustment Factors*, relevant for both the standardised approaches and the internal rating-based methodologies, EBA proposed the policies reflected in Table 9.6.

Table 9.3 Policies proposed by EBA on the standardised approach rules for credit risk

Policy #	*EBA Policy verbatim*	*Comments*
CR-SA-1	As a **short-term action**, the EBA recommends that external credit assessments integrate environmental and/or social factors as drivers of credit risk whenever relevant. Although at the moment the degree of integration varies across rating agencies, with further assessment needed on the robustness of the methodologies and the level of transparency and disclosure to the public, external credit assessments have the flexibility to integrate environmental and/or social risks and should be encouraged to progressively do so	This recommendation, namely incorporating climate risks and other environmental risks in the external ratings provided by the ECAIs, so that any lower ratings will then indirectly affect the risk weights that can be assigned to certain exposures, will particularly affect the exposure classes 'corporates,' possibly 'banks' and securitisation exposures. It is, in fact, an indirect, regulating-by-proxy recommendation that raises some concerns. After all, just as banks themselves cannot currently rely on sufficiently reliable, statistically relevant and comparable data regarding the achievement of sustainability objectives of their own clients or their positions in securitisations, ECAIs will, in my opinion, run into the same problems. In my view, it is therefore of some concern that EBA nevertheless believes that, in terms of environmental aspects, ECAIs will be able to make better and more accurate estimates of the impact on the creditworthiness of relevant bank clients than banks themselves currently can.
CR-SA-2	As a **short-term action**, the EBA recommends that competent authorities verify that due diligence requirements explicitly integrate environmental aspects, to ensure that environmental risks are appropriately captured and reflected in the prudential framework whenever relevant	We can more or less take note of this recommendation; EBA advocates that banks come to a 'green due diligence' routine in their onboarding of clients, which is more likely to be considered a recommendation in the sphere of qualitative risk management, rather than one that will now directly impact Pillar 1 capital requirements.

(continued)

Table 9.3 (continued)

Policy #	*EBA Policy verbatim*	*Comments*
CR-SA-3	As a **medium- to long-term action**, the EBA will monitor that financial collateral valuations increasingly reflect environmental factors, both through market values under Pillar 1 and through valuation and valuation methodologies under Pillar 2	Also with regard to this recommendation, we can take note of the EBA's recommendation, as it is obvious that developments in the 'real economy' and the effects of climate change will become a more prominent factor. We could think of the examples given above of flooding in certain areas leading to a reorientation of the value of residential real estate or commercial real estate, as recurring damage costs ultimately lead to a reconsideration of the value of the properties in question. Valuation issues will have an immediate impact on the extent to which loan-to-value calculations will be made. For example, and, in view of the forthcoming adjustments to the standardised approach to residential and commercial real estate as introduced as a result of CRR3, the impact on risk weights will also follow automatically, so to speak.

Policy #	*EBA Policy verbatim*	*Comments*
CR-SA-4	As a **medium- to long-term action**, as environment-related risk assessments improve and once experience is gained on the newly introduced exposure class, the EBA will assess whether high-quality specialised lending corporate exposures introduced in CRR3 could be subject to similar environmental provisions as under the ISF (Infrastructure Supporting Factor, *add.* BJO), where only exposures meeting strong environmental standards may benefit from the ISF	We refer very briefly to the reflections above on the somewhat 'hidden' regulatory rules for preferential treatment of 'project finance,' insofar as this can be related to 'green infrastructure.' These rules and other regulations in the CRR3 provide a certain prelude to giving separate treatment to banks' exposures to such green infrastructure financing, which it should be noted will require significant experience to be built up to arrive at a final assessment of the potential impact on credit risks (one could frame this ironically by saying, we will only know in 20 years or so how strong the wind blows on average in the North Sea, and only then we will be able to measure the average cash flows from the electricity production of wind farms, and therefore the stability of revenue streams of certain projects).
CR-SA-5	As a **medium- to long-term action**, the EBA will reassess whether environmental risks should be considered in evaluating the appropriateness of risk weights assigned to real estate exposures	We see this point as a reiteration of recommendation CR-SA-3.
CR-SA-6	As a **medium- to long-term action**, the EBA will reassess how E&S (the acronym stands for Environmental & Social, *add.* BJO) risks can be reflected in prescribed risk weights in the SA keeping in mind the intended simplicity of the approach and taking into consideration the developments agreed to at the international level by the Basel Committee	This placeholder also marks the current state of affairs when it comes to the Pillar 1 requirements for bank exposures to be formulated with certainty, given E&S risks. What is also noteworthy here is the reference to the Basel Committee's standards in this area, as yet unavailable.

Table 9.4 Policies proposed by EBA on the internal ratings based (IRB) methodologies for assessing credit risk

Policy #	*EBA Policy verbatim*	*Comments*
CR-IRB-1	As a **short-term action**, the EBA recommends that E&S risks be taken into account in the rating assignment (i.e., risk differentiation step), the risk quantification (through, for example, margin of conservativism, downturn component, calibration segments) and in the application (e.g., via use of human judgement and overrides) in accordance with the existing requirements. In particular, sufficient information should be available, such that: • the incorporation of new risk drivers in the risk differentiation step does not materially decrease the overall performance of the rating system; • the adjustment of estimates during the risk quantification step is based on a sufficient number of observed and reliable data; • the application of overrides should be used in a conservative manner only in relation to some specific, individual cases, in particular. where the institution is of the view that exposures are materially exposed to environmental risks or broader E&S risks, but has insufficient information to estimate the extent to which the borrowers' financial condition or facility characteristics would be impacted and only in relation to a well-justified number of the exposures within the range of application of a rating system affected by environmental risks or broader E&S risks In this context, the EBA recommends clarifying the existing regulatory framework by incorporating BCBS FAQs 8 to 15[104] in the relevant regulatory products (i.e., RTS and Guidelines) of the IRB repair programme	In Sub-section 9.2.3.4, we already briefly called attention to Article 179(1)(a) CRR, which defines the preconditions for defining the parameters by banks applying IRB methods. There, we drew attention to the requirement that when defining these, human judgement (i.e., subjective assessments) should have as little influence as possible on the design of the estimates. In other words, objective data and objective circumstances should be the starting point for the assessment methodology. It is notable in this respect that EBA sees some room for the 'human override' in the design and re-enrichment of the outcomes of risk estimates when the IRB method is used, even though EBA advocates that this should be done with sufficiently conservative assumptions. What stands out is the assumption that corrections and enrichment of risk parameters should take place on an individualised basis. This represents a paradoxical viewpoint since model-based approaches precisely ignore individualised customisation.

[104] Basel Committee on Banking Supervision, Frequently asked questions on climate-related financial risks, 8 December 2022 to be consulted at www.bis.org.

Policy #	*EBA Policy verbatim*	*Comments*
CR-IRB-2	As a **medium- to long-term action**, the EBA will further investigate and reassess whether E&S risk drivers of a broader relevance across different types of exposures should be added to the corresponding non-exhaustive lists of risk drivers referred to in paragraphs 57 (PD estimation), 121 (LGD estimation) and 177 (ELBE and LGD in-default estimation) of EBA Guidelines on PD estimation, LGD estimation and the treatment of defaulted exposures	This recommendation by EBA is perfectly logical. It is obvious that in the future, environmental and social risks will become part of the risk drivers listed in the relevant frameworks, in order to achieve a complete assessment of risk. This recommendation, we estimate, will lead to the most concrete adjustments of the relevant frameworks (contained in the EBA Guidelines[105]) in the shorter term, so on that front, we could not quite place the framing of this in the time horizon of medium- to long term.
CR-IRB-3	As a **medium- to long-term action**, as the impact of E&S risks on defaults and loss rates become available, the EBA recommends that institutions reflect E&S risks in PD and LGD estimates respectively, via a redevelopment or recalibration of the rating system	This encouragement from EBA to the IRB banks is also self-evident. The impact of the environmental and social risks will have to be taken into account in the revision of models when defining the PD and possibly LGD and EaD values. Especially the first two parameters will have to receive most attention, although the impact of the *stranded assets* issue will probably also affect the EaD approaches (after all, it is obvious that banks will also take into account the potential acceleration effects related to stranded assets when assessing loan maturities) The *elephant in the room* here is how the competent authorities will handle the validation processes that necessarily follow model revisions,[106] especially if those model revisions are of a certain importance and have material deviations from the model assumptions as they existed in the developed model that was subject to mandatory validation by the competent authorities.

(continued)

[105] EBA *Guidelines on PD estimation, LGD estimation and the treatment of defaulted exposures*, 20 November 2017 (EBA/GL/2017/16) to be consulted from www.eba.europa.eu/regulation-and-policy.

[106] See on this subject matter: Articles 142 *et seq.* CRR.

Table 9.4 (continued)

Policy #	*EBA Policy verbatim*	*Comments*
CR-IRB-4	The EBA considers it, at this stage, premature to consider further differentiation in the RW supervisory formula, the risk weights applied to the specialised lending under the slotting approach and the LGD and CCF (credit conversion factor, *add*. BJO) values used for under the F-IRB approach for the purpose of taking into account E&S risks in own funds requirements However, the EBA recommends bringing the clarifications provided by BCBS FAQ 8[107] directly in Commission Delegated Regulation (EU) 2021/598[108] on slotting approach	Under the IRB Approach, for specialised lending exposures in respect of which a bank is not able to estimate PDs, LGDs or the banks' PD or LGDs estimates do not meet certain requirements and the appropriate CCF may not be attributed. Banks are to assign risk weights to specialised lending exposures in accordance with Article 153(5) CRR by attributing them to one of the categories set out in the first sub-paragraph of Article 153(5) CRR. This is to be based on their assessment of the specialised lending exposure against each of the factors referred to in the second sub-paragraph of that provision. In accordance with Article 153(5) CRR, when "assigning risk weights to specialised lending exposures institutions shall take into account the following factors: financial strength, political and legal environment, transaction and/or asset characteristics, strength of the sponsor and developer, including any public private partnership income stream, and security package."

[107] The BCBS states in FAQ 8: "When performing the assessment of the category of the subfactor components, banks should analyse how climate-related financial risks could negatively impact the assignment into a category. This includes any potential impact on the financial strength (e.g., estimations of the future demand, economic assumption and stressed economic conditions used for stress analysis), the political and legal environment (e.g., transition risk into 'stability of legal and regulatory environment (risk of change in law),' physical risk into 'Force majeure risk (war, civil unrest etc.)' and the asset characteristic in the case of object finance. When performing this assessment, banks should take into consideration whether climate-related financial risks have been adequately mitigated (e.g., improving adaptation or taking insurance coverage against physical climate risks)."

[108] Commission Delegated Regulation (EU) 2021/598 of 14 December 2020 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards for assigning risk weights to specialised lending exposures, *OJEU* L 127, pp. 1–23.

Policy #	*EBA Policy verbatim*	*Comments*
		The quoted language of the provision of Article 153(5) CRR does not specify environmental or social factors being included in the factors to be taken into consideration for such specialised lending exposures. Specialised lending may involve, for instance, a joint project for the financing of the construction of a windmill park onshore or off-shore in partnership with central or regional governments. Such partnerships may involve the issue of guarantees by governments for the future income of the 'project' and other features. Categorisation of the specialised lending exposure therefore requires a specific 'slotting' of the exposure, for instance, through taking into account the type of counterparty (e.g., instead of the classification of the borrower (the special purpose vehicle), the category of 'governmental' exposures may become relevant in such case) EBA recommends amending the relevant rules in the Regulatory Technical Standards on slotting of exposures in respect of specialised lending (Commission Delegated Regulation (EU) 2021/598) to reflect the additional factors as proposed by the Basel Committee in FAQ 8. This proposed amendment should facilitate the correct slotting of the specialised lending exposure. In my view, this might result in a beneficial treatment of certain sustainable finance projects, if this EBA policy would be followed indeed.

(continued)

Table 9.4 (continued)

Policy #	*EBA Policy verbatim*	*Comments*
CR-IRB-5	As a **medium- to long-term action**, the EBA will reassess the appropriateness of revising the RW supervisory formula, the risk weights applied to the specialised lending under the slotting approach and the LGD and CCF values used for under the F-IRB approach in light of evolving E&S risks and taking into consideration the developments agreed to at the international level by the Basel Committee	This EBA policy is in line with the approach set out under CR-IRB-4. It is consistent with the assumption that environmental and social factors will be relevant for banks that calculate their own PD values and lean on supervisory formulas for LGD and EaD (i.e., so-called 'IRB-Foundation' banks). There will be, in line with the rules on the slotting approach of Article 153 CRR, a further adjustment of the 'supervisory' values to be filled in by the authorities for LGD and EaD.
CR-IRB-6	As a **short-term action**, in line with BCBS FAQ 11, the EBA recommends that institutions be required to consider E&S risk as part of their stress testing programmes referred to in Article 177 CRR. Further specifications could be provided via the mandate set out in CRR3	Banks using IRB methods to calculate the risk weights for the credit risk of their exposures are subject to the obligation to conduct 'internal stress testing,' under the provisions of Article 177 CRR. The Basel Committee recommended in FAQ 11[109] that the stress test scenarios be expanded to include simulations specifically focused on environmental factors. In this regard, EBA intends to further expand the Guidelines and rules on the design of these stress tests in the future, to also take into account these E&S factors.

[109] The Basel Committee stated in FAQ 11: "Climate-related financial risks have the potential to impact banks' credit exposures and banks' assessment of credit risk, asset impairment and expected credit losses. Banks should iteratively and progressively consider climate-related financial risks that affect the range of possible future economic conditions in their stress testing processes. A bank that uses the IRB approach should consider climate-related financial risks that may significantly impact the bank´s credit exposures within the assessment period."

Table 9.5 Policies proposed by EBA on the methods of collateral valuation

Policy #	*EBA Policy verbatim*	*Comments*
CR-COL-1	As a **short-term action**, the EBA recommends that institutions account for relevant environmental factors in the prudent valuation of immovable property collateral. In particular, institutions should consider making necessary adjustments when the current market value of the collateral does not adequately address relevant risks associated with environmental factors that could affect the sustainability of the market value of the property over the life of the exposure. These considerations should include climate-related transition risk and physical risk as well as other environmental risks, and should cover valuation at origination, re-valuation and monitoring, whenever relevant for current market values and sustainable market values over the life of the exposure	Just as it was possible for this author to discuss in more concrete terms the impact that climate change and other environmental factors can have on issues surrounding residential or commercial real estate (see the example I gave regarding the possible impact of regular flooding of certain areas and the change in valuation this can have for real estate located in that region), EBA also comes up with some more concrete recommendations around the issue of asset valuation to take climate- and environment-related factors into account in that valuation. It is in this area that society as a whole also has perhaps the most concrete experience when it comes to the impact of climate change, and this degree of concreteness is therefore reflected in these policy recommendations. It should not be ruled out that banks have already taken the necessary steps urged by the competent authorities, which have imposed necessary requirements on banks in terms of qualitative risk management. See detailed considerations in Sect. 9.2 of this chapter.
CR-COL-2	As a **short-term action**, the EBA will continue monitoring how environmental factors and broader ESG factors are reflected in the value of collateral, with due consideration of national specificities that may exacerbate environmental risks	This policy recommendation results from EBA's position on CR-COL-1 and needs no further clarification.

Table 9.6 Policies proposed by EBA on the methods of applying the so-called Adjustment Factors

Policy #	*EBA Policy verbatim*	*Comments*
CR-ADJ-1	At this stage, the EBA does not recommend introducing environment-related adjustment factors	The Adjustment Factors concern the application of rules from, amongst others, Articles 34 and 105 CRR concerning non-trading book positions measured at fair value. It is presumed that if, under the applicable accounting rules, adjustments are to be made in the valuation of certain assets, those adjustments are also applied to the prudential 'value' of the assets in question, usually by adjusting the deduction of the bank's equity components. EBA concludes that no concrete recommendations or policies are needed in this area in the short term.
CR-ADJ-2	As a **medium- to long-term action**, the EBA will reassess if and how environment-related adjustment factors could be taken into account as part of a prudentially sound and risk-based prudential treatment of individual exposures	EBA concludes that in the medium- or long term, potential revisions shall be necessary to the Adjustment Factors, as explained in the previous row of this table.

Reviewing the set of EBA recommendations and policy intentions *on credit risk weighting*, the following observations can be made. It is clear in which areas future adjustments will follow in the shorter term and in the medium and longer term, noting in particular that the most concrete short-term adjustments will follow for banks applying the IRB methodology. Here and there, even for banks applying the standardised approach, some direction can be discerned for EBA's future strategy in terms of rule adjustments. However, there is less certainty and clarity in this area. In my opinion, this uncertainty is also related to the fact that the Basel Committee, which is ultimately the originator of the standards that will then be incorporated into EU legislation, has not mapped out a clear direction. EBA seems to attach importance to conforming to the international agreements in this area. Uncertainty also lies in the absence of

large-scale evidence of impact, and the data shortage also delays the development of concrete standards and rules. The bottom line is that the focus of assessing the impact of environmental and social risks will mainly rest with individual institutions; it is still too early to arrive at very concrete rules.

9.3.4.4 ESG Risks and Relation to Market Risk

Generally, EBA recommends that banks uphold appropriate forward looking 'fair value' and accounting treatment of assets held by banks. These approaches generally impact the 'market risk' category.

EBA comes up with seven recommendations with regard to this risk category, some highly technical in nature, others more obvious. I omit a detailed discussion of these.

In my view, when it comes to market risk, there will be market dynamics that will naturally lead to incorporating the impact of climate risks, other environmental risks and social risks in market prices. So, it will depend on market dynamics, to what extent such risks will also start to be priced in.

It will also greatly depend on the strategies that the relevant issuers of securities and financial instruments will adopt, the plausibility of published transition plans and the extent to which the (global) capital markets will move to price out companies that are slow to turn around climate change or other environmental risks, let alone social risks.

Without becoming cynical, one cannot escape the impression that, for now, markets are fairly indifferent on this issue. There is no concrete evidence yet that investors actually factor disappointments when it comes to climate change policy plans into their investment policies.

9.3.4.5 ESG Risks and Relation to Operational Risk

Table 9.7 reflects EBA's recommendations and planning in terms of estimating the impact of environmental and social risks *on operational risk*.

Also, with regard to operational risk, the second largest risk category in terms of capital requirements for banks, EBA did not come up with far-reaching and detailed proposals for the time being. Here, too, further developments at Basel Committee level are awaited, and a compliant policy will be followed. This further demonstrates that concrete evidence and data regarding the impact on operational risks are lacking for the time being. The wait-and-see attitude is therefore explainable.

Table 9.7 Policies proposed by EBA on estimating the impact of environmental and social risks on operational risk

Policy #	*EBA Policy verbatim*	*Comments*
OR-1	As a **short-term action**, the EBA recommends that institutions be required to identify whether environmental and social factors constitute triggers of operational risk losses in addition to the existing operational risk taxonomy. This could, for example, be performed as part of supervisory reporting	Also on operational risk, EBA strongly recommends that banks should factor the potential impact of environmental and social risks into their estimated operational risk. It should also be noted that the new rules to be introduced with the CRR3 will introduce a new methodology for the assessment of operational risk. One of the rules that will emerge in this area is the extent to which 'legal impairment risk' should also play a role in banks' 'operational risk taxonomy,' where the rules actually assume the exclusion of that risk for this purpose. But, it can be argued that it is this area in particular that banks are currently most concerned about, namely the extent to which exposure to litigation, for instance initiated by campaigners, can lead to an accumulation of (more or less substantial) losses. Be that as it may, EBA's recommendation is fairly obvious, and will have to be taken into account by banks. Let me reiterate here that according to regulators (e.g., the ECB), in the context of defining double materiality, the Scope 1 and Scope 2 emissions issues (i.e., for instance, the degree of energy-friendly consumption of corporate buildings of the bank itself) do not play a role in defining risk management frameworks. It also follows from this, in my view, that they will not have to be part of the estimates around operational risk.
OR-2	As a **medium- to long-term action**, the EBA will, following evidence of environmental—and where relevant social—factors triggering operational risk losses in increased frequency and severity, reassess the appropriateness of revisions to the BCBS SA methodology, taking into consideration the developments agreed to at the international level by the Basel Committee	EBA reserves that it may, in the future, based on concrete evidence regarding impact of environmental and social factors and repercussions for operational risk, be able to account for them in the form of adapted and enhanced rules. In my view, this could be the case, for example, for the issue of model risk, in other words, the extent to which internal models calibrate correctly to the specific impact of environmental and (possibly) social factors causing harm.

9.3.4.6 ESG Risks and Relation to Concentration Risk

In respect of concentration risk, EBA recommends five steps, which will not be discussed in great detail. EBA will work on the development of a definition of environment-related concentration risk, taking into consideration the developments agreed to at the international level by the Basel Committee. This means that the EU will await the further developments in this respect at international level. EBA suggests, however, that the large exposure regime (arts. 395 *et seq* CRR) as laid down in the current capital adequacy regime will be upheld also in the longer term.

9.3.5 Concluding Remarks

I come to a conclusion of this section, in which we have discussed the complexities of Pillar 1 capital requirements for banks, and developments in this area in the laws and regulations. We first charted the state of play in terms of the further development and tightening of microprudential rules based on the important work EBA is undertaking regarding ESG risk. After the first studies in this field in 2022, EBA, ahead of the deadlines imposed on it in the yet-to-enter-into-force Article 501c CRR, came up with the first report in October 2023. We discussed EBA's recommendations in more or less detail, noting first that the most material changes that can be expected in the microprudential playing field concern the risk weighting for credit risk, albeit changes can also be expected for the other risk categories (for the time being, these are market risk, operational risk and concentration risk).

It is evident that EBA also struggles with the phenomenon of inadequate empirical data on the harm-causing impact that climate change, other environmental conditions and social risk may entail. Moreover, many of EBA's reflections in the recent report demonstrate a cautious stance on intentions to adapt laws and regulations. This is also due to the fact that the main international standard-setter, the Basel Committee, still has to come up with a more comprehensive framework to address climate-related risk.

But to adequately address risk sensitivity, the ball may rather be in the court of the individual institutions which, using all available resources and with the utmost priority, need to adequately identify the risks they may be exposed to in the short but also in the longer term, and ensure that proper capital and liquidity levels are maintained to ensure financial soundness of the bank. In my opinion, this should be based on Pillar

2 capital and liquidity add-ons applied by individual institutions as the product of an internal adequacy assessment, rather than that these add-ons are to be based on supervisory discretion in the context of the SREP process, which may only become relevant and necessary in cases of banks not assuming their responsibilities in this field.