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Sustainability

Sustainability

Risks and opportunities for the financial sector

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The world faces significant upheaval in the 21st century, caused by decades of blatant environmental exploitation. The necessary socio-ecological transformation will change our society in a variety of ways. Achieving this will require that three essential conditions be fulfilled: the consistent diversion of invested funds into transformative companies and projects; clever and consistent regulation that sets the right incentives; and a fundamentally new attitude on the part of financial market players – including a change in business practices. Silke Stremlau

V. Finance and sustainability: the end of "business as usual" 62

Sustainability, which even a few years ago was a niche topic, is now one of the major priorities of finance executives and regulators. It is now widely understood that sustainability is essential to ensure economic prosperty and social cohesion. Yet, these objectives may mean a fundamental changing in many areas of the economy and financial markets. Dr Christian Thimann

Foreword

In December 2015 in Paris, the Parties to the United Nations Framework Convention on Climate Change agreed to limit the global average temperature rise to 2°C. To date, 185 countries have ratified this agreement. The international community will only be able to achieve this goal of two degrees if every part of society plays their part. There are significant challenges for the financial sector, too, and financial regulators and supervisors need to be involved in addressing these. The new issue of BaFinPerspectives therefore focuses on sustainability. Its publication date is 9 May 2019, the exact day of BaFin's conference on sustainable finance. Both the publication and the conference address the question of how the opportunities and risks surrounding sustainability are dealt with by companies, regulators and supervisors.

Dr Levin Holle, Director General for Financial Market Policy at the Federal Ministry of Finance, sets out the plans of the European legislature in this field. An interview with Sven Giegold MEP (Bündnis 90/Die Grünen) complements this with a European perspective, giving an insight into the European Parliament's take on the topic. BaFin's Frank Pierschel provides a rundown of the initiatives at a global level. Articles from Elisabeth Roegele, Dr Frank Grund and Raimund Röseler, all members of BaFin's Executive Board, offer the chance for a closer look at BaFin's views with regard to sustainability in various financial sectors. Dr Christian Thimann, CEO of Athora Deutschland Holding, explains his thoughts on the opportunities and risks of sustainability. Silke Stremlau, Member of the Board at Hannoversche Kassen, discusses attitude, regulation and lateral thinking in the financial market. In an interview with Professor Harald Lesch of the Ludwig Maximilian University of Munich, the science journalist and television presenter gives his views on what can still be done to stop climate change.

We hope you enjoy reading it.

Felix Hufeld
President of BaFin

I

The Federal Ministry of Finance is advancing the topic of sustainable finance at the European and the national level.

Sustainable finance at the global, European and national level

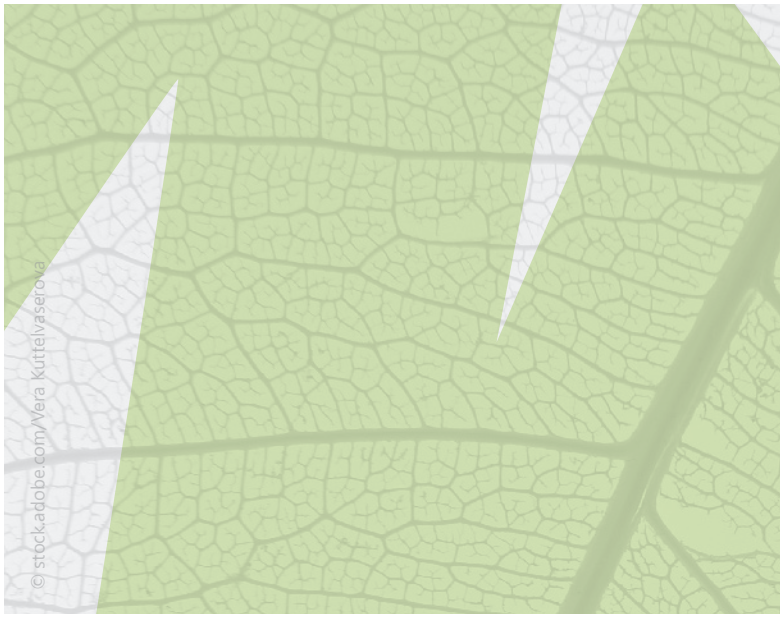
An assessment by the Federal Ministry of Finance

Author

Dr Levin Holle
Director General for Financial Market Policy at the Federal Ministry of Finance (*Bundesministerium der Finanzen* – BMF)

1 Introduction

The topic of sustainable finance has emerged from the shadows and is now firmly in the spotlight. This is a great success, and one that has been achieved thanks to work carried out at the G20 level (Green/Sustainable Finance Study Group) and thanks to the European Commission, as well as to BaFin and the Deutsche Bundesbank. Discussions surrounding this topic have intensified at the European and national level, fuelled not least by the controversial discussion at the global/G20 level. The debate is becoming ever more animated and also more concrete: the publication of the European Commission's ambitious and important action plan, "Financing Sustainable Growth"[1] (March 2018), shows that progress is already being made since it puts the topic and the debate on the agenda of financial market participants and financial market policy. The first tangible progress in terms of implementation has already been made. The BMF has contributed considerably to this. We support the goal of making the EU and Germany as a financial centre a "Global Sustainable Finance Champion". To this end, the BMF works in close collaboration with other ministries, in particular the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (*Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit* – BMU) and the Federal Ministry for Economic Affairs and Energy (*Bundesministerium für Wirtschaft und Energie* – BMWi), as well as with BaFin and the Deutsche Bundesbank, and is in dialogue with representatives of the financial industry, the real economy, civil society and academia.



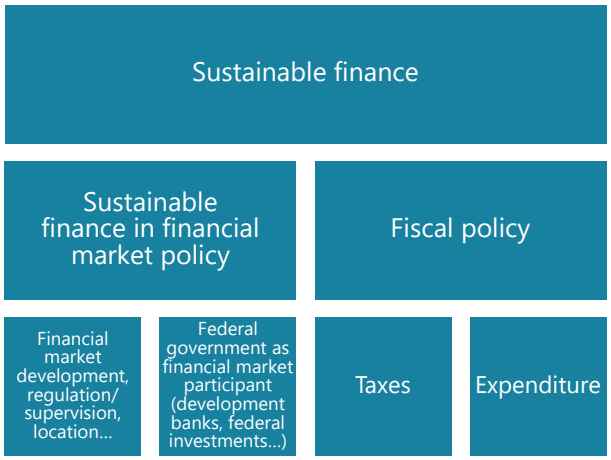
1 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN, retrieved on 11 April 2019.

2 What is sustainable finance?

There are numerous views on the meaning of sustainable finance. As regards "sustainable": sustainable finance relates to the achievement of our sustainability goals. Sustainability itself has many dimensions. For us, the United Nations' 17 Sustainable Development Goals (SDGs)[2] in addition to achieving the Paris Climate Agreement[3] are of key importance, not least because the Federal Government has committed itself to achieving these goals. As regards "finance": this relates to financial market participants identifying, managing and making use of the risks and opportunities that arise (for example as a result of climate change and the transition to a more sustainable economy).

A broad understanding of sustainable finance could also extend to fiscal policy, in addition to financial market policy and regulation (such as CO_2 prices, tax privileges and subsidies). However, in our understanding sustainable finance means that sustainability-related issues are taken into account in the decisions made by financial market participants.

Figure 1: Sustainable finance in context



Source: Federal Ministry of Finance

The following implications for financial market policy apply:

Risks for financial market participants (as well as their customers and the financial system) must be considered appropriately – which of course also applies to physical climate risks and risks that may arise from the transformation to more sustainable development.[4] The primary aim is to increase risk awareness and to improve methods.

It is our view that the financial industry can make a considerable contribution to sustainable development. A financial system can collect as well as evaluate information and, above all, can fund investments. Integrating sustainability-related issues into financial market decisions can ensure that market participants with the potential to thrive in a more environmentally-friendly and climate-friendly economy are identified and receive financing. The financial industry can thus finance the transition to a more sustainable economy.

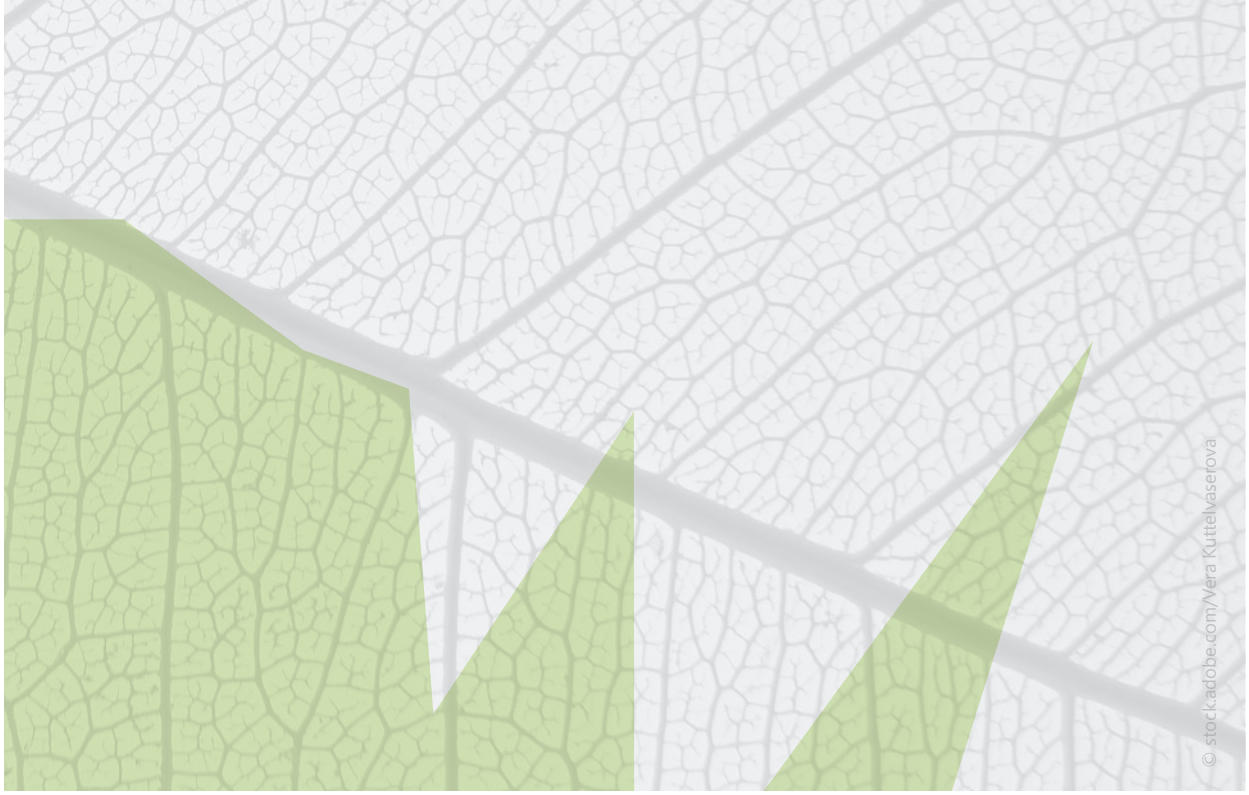
Transparency of financial market participants towards institutional and private investors is also important with regards to the efficiency of the financial system. Financial market participants should explain how they take sustainability-related financial risks and opportunities into account. For this purpose, the financial industry must be able to explain their understanding of sustainability to their clients. The corresponding need and the demand for sustainable financial products will continue to rise among both institutional and private investors. The financial industry can actively follow this positive development and thus promote sustainable investments whilst at the same time making use of its own opportunities in the market.

Furthermore, we encourage financial market participants to adequately consider the consequences of their decisions both for people and for the environment.

2 United Nations, Sustainable Development Goals, https://www.un.org/sustainabledevelopment/sustainable-development-goals, retrieved on 10 April 2019.

3 United Nations, Paris Agreement, https://unfccc.int/sites/default/files/english_paris_agreement.pdf, retrieved on 10 April 2019.

4 Regarding physical and transition risks please see page 22 et seq.



3 Sustainable finance at the global level

At the global level, sustainable finance can play a role in achieving the 17 SDGs and successfully tackling challenges such as those posed by climate change. As part of the Paris Climate Agreement, it was explicitly agreed upon that finance flows should be made consistent with a pathway towards low greenhouse gas emissions and climate-resilient development (see Article 2.1 c).

The Federal Minister of Finance has been involved in the process of establishing the Coalition of Finance Ministers for Climate Action from its beginnings, having joined the coalition on 13 April 2019.[5] Through this coalition for climate protection, finance ministers aim to promote global climate protection within the framework of the Paris Agreement and to join forces for this purpose based on their respective national competencies and tasks. Apart from issues related in particular to fiscal policy, the coalition will address how private capital and the financial industry can contribute to achieving our climate goals.

Finance ministries and central banks within the G20 have already held concrete discussions regarding green or sustainable finance and have agreed on voluntary policy options.[6] In 2016, the G20 Green Finance Study Group started its work under the Chinese G20 presidency. Under the German presidency in 2017, the group primarily dealt with risk management by financial market participants and the use of publicly available environmental data. In 2018, the group – which by this point had been renamed the Sustainable Finance Study Group – focussed on opportunities and on financial market development.[7]

5 Press release The World Bank, Finance Ministers Join Forces to Raise Climate Ambition, http://www.worldbank.org/en/news/press/press-release/2019/04/13/coalition-of-finance-ministers-for-climate-action, retrieved on 30 April 2019.

6 The G20 Finance Track contains communiqués from the G20 meetings of finance ministers and central bank governors, working papers and G20 Summit Declarations since 2008. See: https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Internationales_Finanzmarkt/G7-G20/2017-02-08-dokumente-im-g20-finance-track.html, retrieved on 12 April 2019.

7 G20 Sustainable Finance Study Group, http://unepinquiry.org/g20greenfinancerepositoryeng/, retrieved on 10 April 2019.

The work of the G20 has initiated two positive developments. Firstly, central banks and supervisory authorities around the world have started to review whether and to what extent financial market participants are adequately taking account of their risks. This also includes the German financial supervisors (BaFin and the Deutsche Bundesbank). The Federal Ministry of Finance supports this approach as well as their active membership in the Central Banks and Supervisors Network for Greening the Financial System.[8]

Secondly, there was also a political dimension to the work performed at the G20 level: European representatives united in the face of difficult negotiations and clearly positioned themselves in favour of green and sustainable finance. The European Commission has seized this momentum and, with the support of the member states, has shifted the focus at the European level towards the topic of sustainable finance.

8 Regarding the recommendations of the Central Banks and Supervisors Network for Greening the Financial System please also see page 42 et seq.

4 Sustainable finance at the European level

The action plan "Financing Sustainable Growth" and the provisional finalisation of two EU legislative acts already reflect this prioritisation. At the end of February 2019, the European Commission, European Parliament and the Economic and Financial Affairs Council agreed in the trialogue on creating two new low-carbon investment benchmarks. At the beginning of March 2019, provisional agreement was reached regarding new sustainability-related transparency requirements for financial undertakings. With this, it was possible to finalise, on a provisional basis, two of the legislative proposals[9] published by the European Commission

9 https://ec.europa.eu/info/publications/180524-proposal-sustainable-finance_en#investment, retrieved on 12 April 2019.

in May 2018. These agreements were facilitated since France and Germany advocated for a timely agreement in the council (i.e. among member states), which is necessary before trilogue negotiations can begin. With this, France and Germany were meeting their joint obligation to rapidly push forward important elements in the area of sustainable finance - in line with the Meseberg Declaration of 19 June 2018.[10]

The new sustainability-related transparency requirements in particular can make a considerable contribution to increasing sustainable financing by raising investors' awareness of environmental, social and governance factors.

For the member states, the primary focus was to increase transparency regarding the way in which financial risks are taken into consideration in investment decisions. The European Parliament was of the view that on top of that, transparency with regard to the consideration of the impacts on sustainability factors is important. This relates to impacts on humans and the environment, regardless of whether there is an associated risk for the financial value of an investment. The compromise reached takes account of proportionality to the extent that, with the exception of major players, financial undertakings can also disclose that they do not take account of these additional impacts (report or explain principle).

Additional sustainability information must be made transparent in the case of financial products with a sustainable investment strategy.

Since the text of the regulation still needs to be edited, translated and subsequently ratified by the Parliament and the Council, we expect it to come into force no earlier than the autumn of 2019.

The proposal of the European Commission on provisions for investment services enterprises, insurance intermediaries and insurance undertakings regarding the way in which sustainability factors are taken into consideration as part of customer advice is also based on the proposal for a regulation on sustainability-related transparency requirements. The European Commission has already published and held consultations on the corresponding draft amendments to the existing delegated legislative acts, however owing to the ongoing work on sustainability-related transparency requirements, these amendments have not yet been adopted.

Furthermore, it is important that a taxonomy be developed that would serve as a common language to help financial market participants understand the various dimensions of sustainability and to deal with conflicting aims. This, however, is a challenging task, not least because a taxonomy would not only affect the financial industry but also, indirectly, the real economy. Together with many member states, we are of the opinion that we must find suitable and practicable solutions to this important and complex task. Therefore, more in-depth discussion is required and to that end we are engaged in a close and constructive dialogue with our European partners.

We will also continue to support the appropriate, effective and practical implementation of the European Commission's action plan "Financing Sustainable Growth". An important next step is the establishment of an EU green bond standard. We take a critical approach towards the discussion surrounding the so-called green supporting factor. Reducing capital requirements simply because investments or loans have been defined as sustainable, although they do not pose a lower risk from a supervisory point of view, would be contrary to the goal of financial market stability. The Federal Ministry of Finance rejects the notion of reducing requirements on the basis of a mere label. This is not being supported by a majority of member states as well. Rather, we support the supervisory approach adopted by BaFin and the Deutsche Bundesbank of reviewing whether financial market participants also adequately take account of environmental and climate risks for financial market participants (and their customers).

10 https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Europa/2018-06-20-Meseberg-Anl1.pdf?__blob=publicationFile&v=2, retrieved on 12 April 2019.

5 Sustainable finance at the national level

Sustainable finance, i.e. the integration of sustainability-related aspects into decisions by financial market participants, is nothing new in Germany. KfW Banking Group is one of the largest environmental banks worldwide and through its on-lending to borrowers via local banks and commercial banks, it supports the development of sustainable finance at the local and commercial banks. Also thanks to the activities of the KfW, the green bond market developed significantly. Many other financial market participants in Germany have committed themselves to engaging with sustainability-related aspects through, for example, focussing on the common good or supporting their members (in the case of cooperative financial institutions). In the global financial market, many German financial market participants are considered to be innovative or among the leaders in their field.

There are numerous sustainable finance initiatives, such as the Green and Sustainable Finance Cluster, the Forum Nachhaltige Geldanlage (forum for sustainable investment) and the Hub for Sustainable Finance.

The Federal Ministry of Finance is heavily involved at the global and European level and, together with the BMU and the BMWi, has also introduced the topic of sustainable finance to the State Secretaries' Committee for Sustainable Development *(Staatssekretärsausschuss für Nachhaltige Entwicklung – StA NHK)*, which among other things oversees the implementation of Germany's sustainability strategy at the political level. The StA NHK is chaired by the Head of the Federal Chancellery; all ministries are represented in the Committee.[11]

The StA NHK has agreed upon and published a general understanding of the term sustainable finance in addition to a clear position on the topic on behalf of the Federal Government.[12] Furthermore, the StA NHK has asked the BMF and the BMU, in close collaboration with the BMWi and all other ministries, to implement the following measures in order to make Germany a leading sustainable finance centre:

1. Develop a Sustainable Finance Strategy including a communication strategy for the Federal Government
2. Set up a Sustainable Finance Advisory Committee
3. Continue the exchange of experience as regards the integration of sustainability-related issues in federal investments
4. Review whether it is economically feasible to issue green or sustainable bunds (government bonds)

The aim is to implement these next steps as soon as possible.

11 BMF, Staatssekretärsausschuss für Nachhaltige Entwicklung (State Secretaries' Committee for Sustainable Development), https://www.bundesregierung.de/breg-de/themen/nachhaltigkeitspolitik/der-staatssekretaersausschuss/staatssekretaersausschuss-fuer-nachhaltige-entwicklung-426412, retrieved on 10 April 2019.

12 BMF, Sustainable Finance: BMF initiiert Strategie für Nachhaltige Finanzen (Sustainable Finance: BMF launches sustainable finance strategy), https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Internationales_Finanzmarkt/Finanzmarktpolitik/2019-03-05-sustainable-finance.html, retrieved on 10 April 2019.

6 Outlook

In the years ahead, the topic of sustainable finance will continue to be a key focus at the global, European and national level. At the global level, this issue will gain momentum thanks to the Coalition of Finance Ministers for Climate Action. We are confident that the topic of sustainable finance will also be a key focus of the next European Commission. We welcome this and will support the Commission, including as part of Germany's presidency of the Council of the European Union in 2020. Our ongoing efforts at the national level will support the financial industry in better identifying and managing the risks that are emerging from environmental pollution and climate change. At the same time, awareness of the opportunities associated with sustainable finance will increase. This will create a more stable and more efficient financial system, and will contribute to the achievement of our climate and sustainability goals.

II

Sustainability in financial supervision

Financial supervisors are tasked with classifying and understanding the complexities of sustainability risks. In this section, key sustainability issues are examined from a banking, insurance and securities supervision perspective.

Sustainability – a challenge and an opportunity for the banking industry

For banking supervisors, sustainability was for a long time merely a matter of concern for the capital markets. But climatic and ecological changes in particular are making themselves felt in all areas. But sustainable financing also opens up earnings opportunities for banks.

Autor

Raimund Röseler
Chief Executive Director of Banking Supervision,
Federal Financial Supervisory Authority (BaFin)

1 Introduction

Sustainability is a topic everyone is talking about – and rightly so: the need to enshrine the notion of sustainability more profoundly in society is becoming increasingly obvious. That is seen already from a look at issues like pollution and climate change that are the focus of this article. In the past 20 years alone, meteorologists have observed 18 of the hottest years since weather records began[1] in the middle of the 19th century.[2] For good reason, the European Union (EU) therefore committed itself in the Paris Agreement on Climate Change to reducing CO_2 emissions by 40 per cent by 2030 compared with 1990.[3]

1 Cf. EU Commission, "A Clean Planet for all - A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy", 2018, page 2.
2 Cf. website of the German weather service Deutscher Wetterdienst, https://www.dwd.de/SharedDocs/faqs/DE/klima_faqkarussell/klimadaten_1.html, retrieved on 1 April 2019.
3 loc. cit. (fn. 1), page 5.

But a serious ecological makeover of the economy will call for unprecedented efforts. The current debates on energy and traffic policy provide a foretaste of that. And you don't have to be a prophet to argue that climate change will also entail massive changes for the European finance industry – and thus also the banking sector. If we sit back and do nothing at all or not enough, the impact will be all the more dramatic (see Table 1).

But what might a banking sector that can be called sustainable in the true sense of the word look like – and what is the role of supervisory authorities in such context? The following are some considerations about how BaFin banking supervisors will steer their supervisory resources to a course for greater sustainability.

Sustainability risks and opportunities

For a long time, sustainability for banking supervisors was the responsibility of the capital markets since initially the focus was primarily on producing the resources for achieving climate targets. But banking supervisors and regulators also have to deal with the subject since climatic, environmental and socio-ethical changes will not spare the banking sector either – not to mention the considerable risks that might be associated with them even if their impact is not always felt immediately. This is something that was already made clear in the Progress Report published in October 2018 by the Network for Greening the Financial System (NGFS) that brings together various central banks and supervisory authorities. The comprehensive Report by the Network published on 17 April 2019 recommends supervisory authorities, among other things, to include climate-related risks in the supervision of financial institutions.

Table 1: Expected economic impacts for different warming paths

	< 2°C		3°C	5°C
Global GDP impact (2018: $ 80 billion), compared with scenario without climate change.	-10 %	-13 %	-23 %	- 45 %
Stranded assets	Transition: Withdrawal from fossil fuels (assets, supply, power, transport, industry)		Assets based on fossil fuels are decommissioned	Physical risks: uninhabitable zones, agriculture, water-intense industry, declining tourism
Food supply	Changing diets, crop failures		24% yield loss	60% yield loss; 60% demand increase
Challenges for insurance industry	Production facilities and investments emitting less $C0_2$ as well as investments in infrastructure		Increasing need to manage sustainability risks	Risk trend: Recession, tensions, high and unpredictable risks

Source: Own table – based on Chief Risk Officers Forum, January 2019.

At the same time, sustainable financing holds opportunities for banks and savings institutions – both ecologically and economically. The financing requirement is huge: according to estimates, the energy sector and related infrastructure alone in the EU will need 175 to 290 billion euros[4] each year to meet climate protection targets agreed on by the Member States of the United Nations Framework Convention on Climate Change on 12 December 2015 in Paris[5].

It is up to the credit institutions to identify these opportunities and prepare for them in their business models and structures. In the long term, institutions failing to adapt might not be able to attract any more investors and customers as well as young, motivated employees. I dare say that in the long term only those credit institutions geared to sustainability will themselves have a sustainable existence on the market.

4 Including cost of replacing vehicle fleet, cf. EU Commission loc. cit. (fn. 1).

5 Cf. Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Die Klimakonferenz in Paris (The Climate Change Conference in Paris), https://www.bmu.de/themen/klima-energie/klimaschutz/internationale-klimapolitik/pariser-abkommen/, retrieved on 29 March 2019.

2 Description of sustainability risks

2.1 From climate and environmental risks to financial risks

Climate and environmental risks, social risks and risks arising from corporate governance are also described by the abbreviation ESG (environmental, social and governance)[6]. Currently, though, sustainability is primarily associated with climate and environmental risks.

Climate and environmental risks can be subdivided into:

- Physical risks: these include damage from storms, heavy rainfalls, floods, hail, extreme snowfall, drought, rising sea levels and the gradual worsening of production and working conditions. Banks – unlike insurance undertakings – are not primarily affected by direct physical risks but only in special situations, as when a centralised data centre is no longer operational due to an extreme weather event, which is something that should already be addressed by the operational risk.
  In the banking sector, indirect physical risks are the more serious risks. For example, customers may default on their loans because their bank-financed buildings or production facilities have been destroyed. Or because their income base has been diminished or destroyed – as in the case of crop failures in the agricultural sector, to give just one example. The indirect physical risk is enhanced if the collateral furnished for the financing can be physically destroyed or if buildings or production facilities are no longer insurable.
- Transitional risks: these include risks resulting from politically motivated changes, as when prices for fossil fuels are deliberately increased and environmental taxes are introduced. But even the risk of customers turning their backs on "dirty" companies falls under

6 In its Sustainable Development Goals, the United Nations sets out 17 development targets to help ensure a sustainable development at the economic, social and ecological levels. Countries and governments, but also companies, education institutes and civil society are to make their contribution.

this category – as do the effects of new and potentially disruptive technologies and liability risks to polluters[7]. In the financial sector, transitional risks are almost exclusively indirect. For credit institutions, they come into play particularly as a result of valuation risks, for example as a result of impairments on property or enterprise values.

- Financial stability risks: the effects of physical and transitional risks will be felt by markets more profoundly than can be imagined today. They might even give rise to financial stability risks.

All types of risks previously taken into account by banking supervisors – credit, market, operational and liquidity risks – also have a sustainability risk dimension (see Table 2). That means that from a supervisory viewpoint no need arises for a separate category "sustainability risk".

Table 2 shows how the various environmental and climate-related risks are to be classified into the existing risk structure.

My British colleagues from the Prudential Regulation Authority (PRA) have examined their banking market. They found that 30 per cent of the surveyed institutions view climate risks primarily as a matter of corporate social responsibility (CSR). However, 60 per cent regard such risks as financial risks on a three-to-five year horizon and ten per cent even adopt a long-term strategy[8]. Even if the UK market differs in some points from the German market, financial climate-related risks also affect all risk types here as well.

7 Cf. Oliver Wyman, Climate Change – Managing a new financial risk, 2019.

8 PRA, Transition in Thinking: The impact of climate change on the UK banking sector, 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, retrieved on 29 March 2019.

Table 2: Classification of sustainability risks into current risk structure

	Credit risk	Market risk	Operational risk
Physical risks	■ Revaluation of debt-servicing capacity and collateral ■ Rating downgrades	■ Rating downgrades and share price losses after disasters and as a result of gradual deterioration in productivity	■ Physical damage affects balance sheet; diminished availability of banking services
Transitional risks	■ Risk transfers ■ Impact on probability of default (PD) and loss given default (LGD)	■ Sudden extreme price fluctuations in assets; stranded assets ■ Long-term price increases as a result of environmental and social changes	■ Image loss resulting from failure to switch to sustainable management practices
Financial stability risks	■ Entire industries and markets affected ■ Economy can no longer be insured at reasonable cost	■ Market-imperilling effects from climate and environmental damage in an entire region	■ Reputational losses for entire industries/entire markets ■ Collapse of large portions of the financial infrastructure of a country/region

Source: BaFin

2.2 Credit and counterparty default risks

In the case of credit and counterparty default risks, sustainability risks are reflected both in the borrower's probability of default and in the value of the collateral. Example: A storm destroys a loan-financed office building. Even in developed markets, the collateral is insured only to less than ten per cent of the gross domestic product, excluding (term) life insurance policies.[9] That means there is a high likelihood of losses arising which are uninsured and would have to be offset by equity capital. Pundits from the insurance industry hold a world that is four to five degrees warmer to be no longer insurable[10], which may pose a threat to the existence of borrowers in the event of one-off or recurring disasters.

Many retail banks see an increased risk of flooding and the risk of devastating storms as the most significant climate-related financial risks. But even the transformation of energy policies and structural climate changes may cause losses and interruptions in business.

2.3 Market risk

In the case of market risk, the physical risks have a direct impact through prices. A destroyed crop is no longer available to the market, regardless of whether the cause was heavy rainfall or a period of drought. But if extreme weather events increase and climatic conditions worsen, this may have a negative impact on macroeconomic variables such as economic growth, employment levels and the rate of inflation, for example if public infrastructure suffers and tax revenues fall[11]. But that is not all: if the rating agencies start increasing the risk ratings of countries, regions and local government entities as a result of climate events and if their bonds are downgraded as a result, a vicious circle could ensue. Credit rating agencies are therefore increasingly developing methods to rate the physical impacts of climate change on countries.

The ecological transformation of the economy will also have a noticeable effect on the nature and scope of economic growth as well as on the productivity and make-up of investments. Coming on top of that is the inevitable burden of carbon-intense industries that will also result in changes in the prices to be paid for the various forms of energy and commodities. For example, in 2018 changes in the EU emissions trading scheme resulted in a record price for the certificates of 25 euros per tonne of CO_2, a jump of 300 per cent over twelve months. But according to scientific studies, 100 euros per tonne of CO_2 or more would be needed to actually meet the two-degree target of the Paris Agreement – and that not only in the EU.[12] An abrupt and far-reaching revaluation of the climate-related financial risks could destabilise the markets and lead to a procyclical trend. A simultaneous response of credit institutions to this might turn critical especially if it is not clear which banks have such risk positions on their books. High losses and liquidity problems would then be imminent.[13] In the worst case, a tense risk situation might even be exacerbated by third-round effects.

9 OECD, Global Insurance Market Trends 2016, http://www.oecd.org/daf/fin/insurance/Global-Insurance-Market-Trends-2016.pdf, retrieved on 29 March 2019.

10 CRO-Forum, The heat is on – Insurability and resilience in a Changing Climate, https://www.thecroforum.org/2019/01/24/crof-eri-2019-the-heat-is-on-insurability-and-resilience-in-a-changing-climate/, retrieved on 29 March 2019.

11 Stenek, Amado, Connell, Climate Risk and Financial Institutions – Challenges and Opportunities, in: Scott, van Huizen, Jung (2017), The Bank of England's response to climate change.

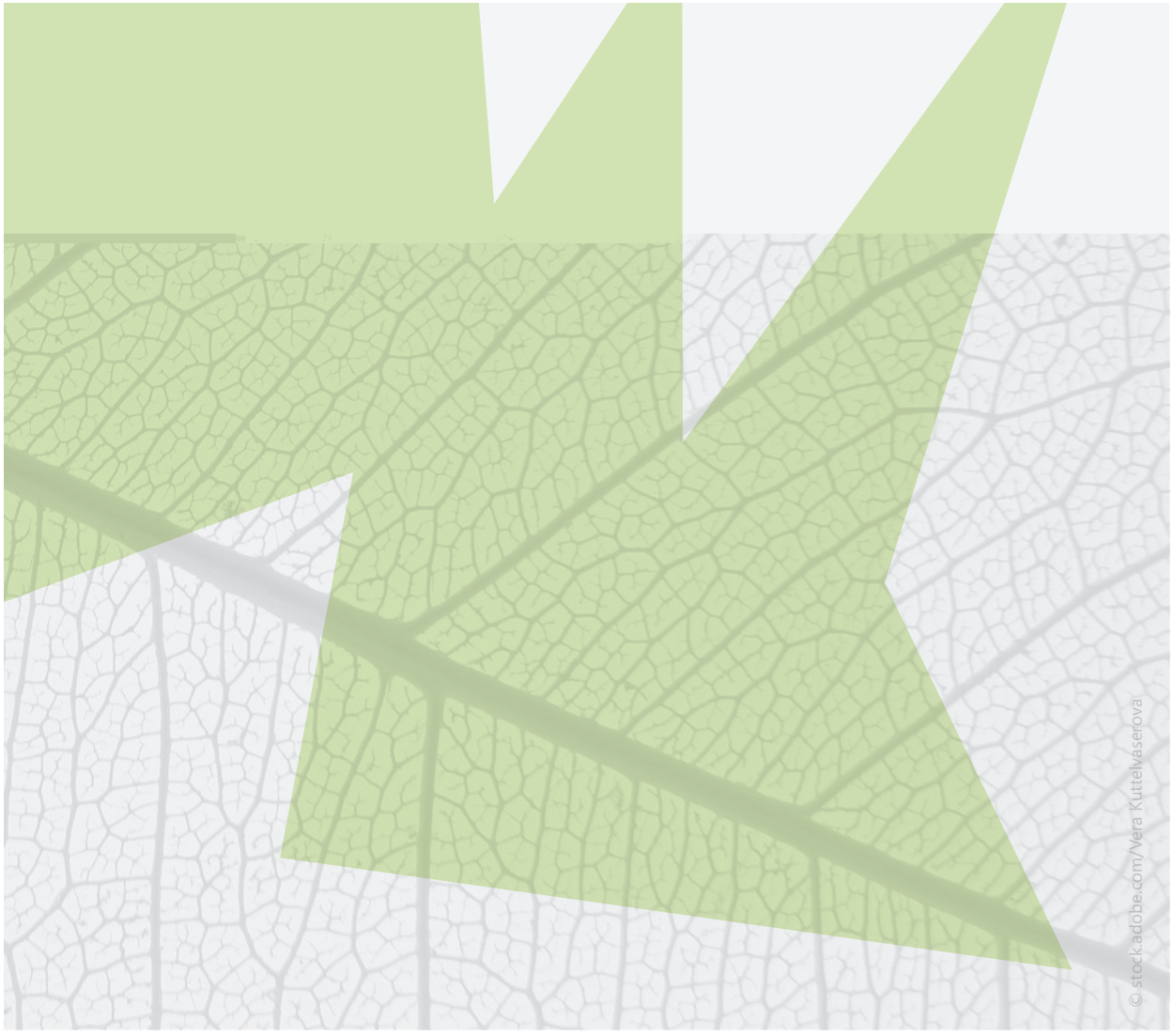
12 Cf. Vermeulen/Schets/Lohuis/Kölbl/Jansen/Heeringa, An energy transition risk stress test for the financial system of the Netherlands, in: DNB Occasional Studies Volume 16 -7, 2018; IEA/IRENA, Perspectives for the Energy Transition, 2017.

13 European Systemic Risk Board, Too late, too sudden: Transition to a low-carbon economy and systemic risk, https://www.esrb.europa.eu/pub/pdf/asc/Reports_ASC_6_1602.pdf, retrieved on 29 March 2019.

2.4 Operational risks

The situation is somewhat different for operational risks (OpRisk). There is no question that climate change increases the OpRisk risk profile. Extreme weather events can adversely affect business continuity and even have an impact on branches and group-internal service providers in other parts of the globe. Generally, the direct physical risks for credit institutions are covered by the operational risk. But this does not ring true for all reputational risks that might arise because banks have missed the window of opportunity to re-orient themselves to sustainability, if for example their business practices are deemed immoral and legal risks arise. The market mood is changing. Increasingly, stakeholders are closely watching how the banking sector responds to climate change.[14] That is why credit institutions have to scrutinise their business relationships to emissions-intense companies with a view to their strategic orientation.

14 loc. cit. (fn. 7).



3 Regulatory and supervisory treatment of sustainability risks

It is only when we grasp sustainability-related risks that we can also manage them correctly at the regulatory and supervisory level. What we need are policies and approaches that actually work in practice. A suitable regulatory framework is provided by the Basel framework with its three pillars. Pillar 1 covers minimum capital requirements, Pillar 2 the basic principles of qualitative banking supervision and risk management in banks, and Pillar 3 the disclosure requirements.

3.1 Pillar 3 approach

First of all, we take a look at the transparency requirements of Pillar 3, since it is here that we find the tools we need to establish real comparability between financial products and to reduce greenwashing. Moreover, one of the primary objectives must be to enable investors to make the deliberate choice for green, less green or even brown investments. Of course, I am not under any illusions about the fact that private investments in green assets in some cases are also the expression of personal convictions that may change. What remains from that is something we will learn when the economy slows and personal financial activities are perhaps once again defined only by expectations for returns.

On the other hand, sustainable financing has long ceased to be a matter for a small, particularly ecologically oriented clientele. Brown investments carry the risk of generating a loss in value in the medium to long term.

The objective of transparency must also be the ability to assess the long-term nature of investments. A sustainable investment is a long-term investment. And we all have to show those who even today still think in terms of one quarterly report to the next that long-term investments are also worthwhile. The work on a uniform taxonomy in Europe has not yet been completed.

Transparency as an advertising tool

Greater transparency is something that benefits not only investors but also companies. The latter do well to see new transparency requirements not as a burden or rampant bureaucracy but as an opportunity to proactively use their commitment to greater transparency as a means to vie for customers. They can do this, for example, by openly communicating the criteria for their financing and investment activities as well as the values motivating their management. Credit institutions that succeed in conveying their sustainability approach will gain crucial momentum for their own financial future. To a certain extent, they are already required to do this by the Regulation on disclosures relating to sustainable investments in the financial sector[15]. Young customers are taking a keen interest in these issues and to a decisive extent take account of ecological and social aspects in their economic decisions. As the current "Fridays for Future" protests by school students show, a sustainable future is hugely important for the young generation. These young demonstrators of today are the bank customers of tomorrow.

3.2 Pillar 2 approach

We now take a look at Pillar 2 of the Basel framework and thus at the integration of aspects of sustainability into the Supervisory Review and Evaluation Process (SREP). In the fifth European Capital Requirements Directive (CRD V), the European Banking Authority (EBA) has been given such review mandate for the integration of sustainability aspects. But before discussing the allocation of capital for Pillar 2 risks, we should first of all draw up the "soft" requirements. Until the EBA mandate is completed, the focus will initially be on bank control, risk management and governance.

15 European Commission – Press Release, Capital Markets Union: Commission welcomes agreement on sustainable investment disclosure rules, http://europa.eu/rapid/press-release_IP-19-1571_en.htm, retrieved on 29 March 2019.

Institutions should take a top-down approach – from the management board to the departments – to the new risks or those risks perceived to be new, develop a strategy and a fitness check. What are the main drivers of an institution's own business? Where can the effects of sustainability risks be felt? Which portfolios are concerned? Which processes might have to be adjusted? Are new risk limits to be set? Is the organisational structure still right? All these points are already abstractly addressed in the German Banking Act (*Kreditwesengesetz* – KWG) and the Minimum Requirements for Risk Management (MaRisk). BaFin will therefore formulate its ideas for the specific integration of sustainability risks initially as expectations based on recommendations and then engage in public consultations. By the end of 2019, BaFin will publish a paper in which it states how it envisages the integration of sustainability aspects into the risk management of the credit institutions.

These expectations will then be validated with financial industry representatives. Of course, banks and savings institutions already having suitable processes in place will be able to demonstrate to the supervisory authority that they already sufficiently take account of the newly drafted expectations. With its paper, BaFin particularly wants to address those institutions that are only now just beginning to grapple with the issue of sustainability. We want to draw their attention to the changing risk situation and make them aware that they have to reflect on their strategic orientation, their organisational and operational structure, and on how they communicate both internally and externally. We also wish to provide banks and savings institutions with a guideline on which to orient themselves when it comes to defining the necessary level of transparency. We will later review the management of sustainability risks also in the context of our ongoing supervision and thus gradually achieve a solid Pillar 2 coverage, possibly with additional capital requirements.

3.3 Pillar 1

From the outset, the Pillar 1 capital requirements were the subject of very controversial debate in international forums dealing with the coverage of sustainability risks in financial markets. Particularly the green supporting factor that some have called for gave rise to heated discussions – in the financial industry and with supervisory authorities alike. Should once again a social or political objective be shifted onto the bank's balance sheets? As much as I understand this intention, I also have to urge caution as a supervisor. So far, there have been few models for a green supporting factor. Many questions still have to be clarified to ensure adequate risk coverage of "green" and "brown" risk positions.

In the context of the second European Capital Requirements Regulation (CRR 2), the EBA is given a corresponding review mandate and will submit a report to the European legislative bodies within six years. What is needed is reliable data. But it will be possible only with difficulty to estimate how investments in sustainable assets will develop in crisis based on current data alone[16]. If sustainability risks are to be forecast realistically, it will be indispensable to establish additional expertise.

16 Obtaining empirical proof, however, must overcome the problem that historical loss data in times of climate change and the transformation in energy policy might have to be supplemented by simulations and models.

4 Conclusion

In conclusion I would like to emphasise that sustainability for me is much more than just a subject I am dealing with in a professional capacity. Sustainability for me is something personal and close to my heart. Anyone taking an honest, realistic look at the world around us cannot but recognise just what challenges are facing society – and thus also the banking industry – as a result of climate change. We will succeed in adequately meeting these challenges only with a committed and strategically well positioned financial industry – and not without or even against it. For the banks and savings institutions, that means a great deal of tedious and difficult adjustments, but also opportunities. Ecological and social arguments will make it possible to attract new customers and motivated employees. Those who negligently miss the opportunities of sustainability will take on risks society might no longer be willing to assume.

Sustainability: a duty and a challenge for the insurance industry

Insurers can act sustainably as risk carriers, risk managers and investors – and that is what they should do.

Author

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1 Introduction

It has been a long time since green was just a colour. Green is a quality claimed by several different groups, from political parties, to vegetarians and vegans, to hunters. So it is hardly surprising that "green" does not mean the same thing to everyone.

The same is true for sustainability. Anybody who even as much as follows the societal discussion about it from the sidelines develops an abstract notion of what sustainability means. But while it is not a huge issue when private individuals talk past each other in conversations about the topic, supervisory authorities need to develop a shared understanding of sustainability, as they need a common premise on which to base their examination of whether companies are acting sustainably.

2 The “E” in ESG has always been an inherent part of insurers’ DNA

Take anything more than a brief foray into the field of sustainability and you will quickly come across the acronym ESG, which stands for environmental, social and governance. Coming to grips with the “E” in ESG has always been an inherent part of the DNA of insurers that cover the financial losses caused by weather-related events and are in direct contact with claimants. Reinsurers have the global outlook they need for perils resulting from climate change, and have built up many years of expertise.

As risk carriers and risk managers, insurers play key roles in the economy. Before concluding a contract they examine whether the measures taken to mitigate risk are sufficient and, if necessary, call on the proposer to put in place further precautionary measures so that the risk can be insured.

When a loss occurs, insurers pay the costs that arise, such as the necessary restoration costs for a building hit by flood damage. There are also insurance products to cover damage to the environment. In all cases, insurers contribute to reducing the damage for society.

This means that insurance undertakings are the first points of contact for the real economy when it comes to dealing with environmental risks. This core competence is a chance for them to make their mark on the societal debate and is an asset that the industry should make the most of.

The sustainability of society’s future behaviour from an environmental perspective will be reflected in the frequency and amount of claims payments. If – as the majority of scientists believe – climate change increases the likelihood of typical insured perils such as storms, fires and floods, it is very much in insurers’ own interests to be involved in the fight against climate change.

Insurance undertakings are able to quickly free themselves from their contracts, which, as a rule, only have a duration of one year, and can therefore counteract the danger of incalculable claims expenditures. However, in the medium to long term the business model itself is on the line: it is doubtful whether insurers would still be able to offer sufficient and affordable coverage if the global temperature rose to three degrees above its level before industrialisation.

If existential risks can no longer be insured, this will have serious consequences for the real economy. But the insurance industry would also be directly affected if its premium income in property lines of insurance were to decrease in volume.

BaFin expects the insurance industry to actively address all relevant environmental risks in their risk management and to keep an eye on the effects these have on their business models. Insurers should sharpen their focus as risk managers, keeping in mind potential future developments and applying their expertise in the societal debates. Against this backdrop, I welcome the current position taken by the CRO Forum[1] in the paper titled “The heat is on”.[2]

1 The CRO Forum was founded in 2004 with the objective of promoting best practices in risk management in the insurance industry. The Forum’s members are multi-national insurance companies.

2 CRO-Forum, The heat is on – Insurability and Resilience in a Changing Climate, https://www.thecroforum.org/2019/01/24/crof-eri-2019-the-heat-is-on-insurability-and-resilience-in-a-changing-climate/, retrieved on 19 March 2019.

3 ESG issues in investments come to the fore

Another, more recent task for the insurance industry as a whole is to deal with ESG-related issues in investment policies, although a number of insurers have already been working on this topic specifically for some time.

Insurance undertakings are some of the largest institutional investors. German life insurers and *Pensionskassen* alone hold investments with a book value of over a trillion euros that can be invested long-term. It is therefore understandable that certain groups of stakeholders see the insurance industry as a potential source of financing for the sustainable restructuring of the economy.

However, investments for insurance undertakings are primarily assets to cover their obligations on the liabilities side, which in many cases are long-term in duration. Life insurers and *Pensionskassen* meet their obligations over several decades; in some cases, benefits are only paid after 60 years. This means that the assets need long-term availability and need to remain stable in value. From this perspective, insurers are, by definition, already acting sustainably.

When the European Commission presented its Action Plan for a greener and cleaner economy in 2018, it called for further action from the finance industry[3] and, shortly afterwards, produced draft legislation regarding climate benchmarks, a classification system (taxonomy) and transparency in investments. BaFin expects that spring 2019 will bring, among other things, the adoption of a European regulation on disclosures relating to sustainable investments and sustainability risks.[4]

Moreover, the European Commission has called on the financial industry to help finance measures to achieve the objectives of the Paris Agreement[5]. At present, there is no legal obligation for insurers to play a role in financing Germany's energy transition or other large-scale projects.

BaFin is being guided by the principle that no regulatory bonuses can be granted for sustainable investments if such a bonus is not justified with regard to the underlying risks – unless it is found that the investments are associated with lower risks. Ultimately, the risk of default is present in all forms of investments. This risk is appropriately included in the standard formula for the calculation of own funds under the European supervisory regime Solvency II.

Anyone contemplating capital relief needs to ask themselves the following questions at the very least: are the sustainable investments really lower risk? Have new risks – political risks, for example – been taken into account appropriately?

Sustainability involves – as stated above – taking a long-term approach. Insurers will only make long-term investments if they can cover corresponding long-term liabilities. For the insurance industry to provide a substantial contribution, it is therefore of key importance that insurers remain willing to take on long-term illiquid liabilities in the future.

3 European Commission Press Release, Sustainable Finance. Commission's Action Plan for a greener and cleaner economy, http://europa.eu/rapid/press-release_IP-18-1404_en.htm, retrieved on 20 March 2019.

4 European Commission, Proposal for a regulation of the European Parliament and of the Council on disclosures relating to sustainable investments and sustainability risks and amending Directive (EU) 2016/2341, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018PC0354, retrieved on 20 March 2019.

5 loc. cit. (footnote 3).

4 Regulation and sustainable investment

From the regulatory perspective, sustainability in investment policy is far from a new issue. The European Insurance and Occupational Pensions Authority (EIOPA) outlined certain expectations back when it introduced Solvency II. The EIOPA Guidelines on the system of governance, for example, make it clear that sustainability is one of the aspects to be considered when investing under the prudent person principle[6].

With effect from the start of this year, the German Insurance Supervision Act (*Versicherungsaufsichtsgesetz* – VAG) specifies, with regard to investment, the extent to which institutions for occupational retirement provision (IORPs) are to address ESG issues in their system of governance, for example in risk management and in the Own Risk Assessment (ORA)[7]. IORPs are required to be transparent to the public, supervisors and customers about whether and how they take ESG issues into account in their investment policies.

At European level, EIOPA emphasises the relevance of the issue from a supervisory point of view and plays a role in shaping the regulatory requirements. A project group has been set up for this, and BaFin is directly involved in the work of this group. EIOPA is thereby taking into consideration both investment risks and the risks that exist in connection with the underwriting of insurance contracts.

This will be reflected in its response to the European Commission, which it will submit as part of its technical advice[8] on Solvency II and on the Insurance Distribution Directive (IDD) on 30 April 2019. The focus will be on insurers' systems of governance and the inclusion of ESG factors when determining the target market. In EIOPA's interpretation, it is not just the risk management function that should address ESG risks, but also the actuarial function, for example. EIOPA's suggestion to amend certain points in the regulation underwent a public consultation at the start of this year. BaFin is in support of the chosen approach and is closely following how the European Commission sets out the delegated acts on Solvency II and the IDD on the basis of EIOPA's technical advice.

However, EIOPA's project plan for 2019 envisages a large number of other activities connected to sustainability. As early as summer 2019 EIOPA is planning to provide, in an EIOPA Opinion targeted at national supervisory authorities, specific details on how IORPs are to handle ESG risks in their system of governance. BaFin will provide its input on this in the Board of Supervisors. In addition, the European Commission has asked EIOPA for a response (Request for an Opinion) to more quantitative questions (Pillar I under Solvency II). EIOPA is currently carrying out comprehensive analyses to this end, taking into account the findings of a survey it carried out recently in the insurance industry. EIOPA will respond to the European Commission's enquiry by 30 September 2019.

Transparency is also a topic of focus at present for the Sustainable Insurance Forum (SIF)[9], which is a global network convened by the United Nations Environment Programme that BaFin has been a member of since its inception. Since 2018, EIOPA has also been a member of this network. Supervisors use this regulatory platform to share experiences or conduct joint research. Since the SIF, in collaboration with the International Association of Insurance Supervisors (IAIS), published the "Issues Paper on Climate Change Risks to the Insurance Sector"[10] last year, it has been reviewing how insurance undertakings

6 EIOPA, Guidelines on system of governance, https://eiopa.europa.eu/GuidelinesSII/EIOPA_Guidelines_on_System_of_Governance_EN.pdf, retrieved on 20 March 2019

7 Section 234a et seq. of the VAG.

8 EIOPA, Consultation Paper on Technical Advice on the integration of sustainability risks and factors in the delegated acts under Solvency II and IDD, https://eiopa.europa.eu/Pages/Consultations/Consultation-Paper-on-Technical-Advice-on-the-integration-of-sustainability-risks-and-factors-in-the-delegated-acts-under-S.aspx, retrieved on 20 March 2019.

9 https://www.sustainableinsuranceforum.org/, retrieved on 20 March 2019.

10 IAIS, Issues Paper on Climate Change Risks to the Insurance Sector, https://www.unepfi.org/psi/wp-content/uploads/2018/08/IAIS_SIF_-Issues-Paper-on-Climate-Change-Risks-to-the-Insurance-Sector.pdf, retrieved on 20 March 2019.

are implementing the recommendations of the FSB Task Force on Climate-related Financial Disclosures[11]. In order to research this, SIF members are currently conducting a randomised survey among the insurance undertakings under their supervision. The SIF hopes to present its findings this year.

11 https://www.fsb-tcfd.org/, retrieved on 20 March 2019.

5 Sustainability in investments a key focus for BaFin

For 2018 and 2019, BaFin's insurance supervision sector named sustainability in investments as one of its supervisory priorities. Linked to this, specific activities and events were organised at national level, such as supervisory discussions with insurance undertakings, surveys and industry workshops. Last year, for example, BaFin conducted an industry survey, which turned out to be very informative. It indicated that insurers considered 73 percent of their investments to be sustainable – although this was on the basis of their own interpretation of the concept.[12] Almost half of the companies surveyed stated that they used a negative list, which is a list of investments that do not meet certain criteria and which therefore cannot be invested in. Meanwhile, only 13 percent of insurers use a positive list to record which investments may be deemed sustainable.

The workshops BaFin held with the industry also provided important insights into insurers' approaches to ESG risks in their investment policies. The workshop format proved valuable, and BaFin therefore intends to continue it in 2019. The goal of these various initiatives is to support the transfer of knowledge across the entire industry and to improve insurance undertakings' awareness of the need to include ESG risks in their system of governance and to organise their internal processes accordingly. To this end, BaFin will release a guidance notice for all financial sectors to communicate its opinion. It will provide an initial outline for this at the conference it is hosting on 9 May 2019[13] regarding sustainability in the financial sector[14].

12 See July 2018 edition of the BaFinJournal, page 17 et seq. (only available in German)

13 The present issue of BaFinPerspectives will be available from 9 May.

14 www.bafin.de/dok/11786734.

Sustainability as a supervisory requirement

Interview with

Elisabeth Roegele
Chief Executive Director of Securities Supervision and Deputy President of the Federal Financial Supervisory Authority (BaFin)

Ms Roegele, sustainability is currently a key focus in European legislation (see info box on page 35). How does BaFin view the developments that have so far been seen at the European level, in particular with regard to investment law, and how is BaFin involved in shaping these developments?
As a matter of principle, BaFin supports and advocates the inclusion of sustainability factors in the EU regulations on supervision. We expect the effects of a practicable European taxonomy in particular to be positive. It should be noted that sustainable finance is not limited to green investments, but also incorporates social factors such as the fight against child labour, as well as basic principles of corporate governance. The EU's legislative package uses the terms "environmental", "social" and "governance" in this context, which are often referred to as "ESG criteria".

Furthermore, the regulations contained in the European Commission legislative proposals[1] regarding increased transparency requirements may help investors to find out about the sustainability of financial products and thus base their investment decisions on this information. One of the objectives of the transparency requirements is that asset management companies should report how they take sustainability risks into account in the investment process. They should furthermore provide specific information in the distribution of sustainable financial investments. More stringent transparency and disclosure requirements should above all relate to financial products that are explicitly labelled as

1 https://ec.europa.eu/info/publications/180524-proposal-sustainable-finance_en, retrieved on 18 March 2019.

At a glance

Sustainability in European legislation

The topic of sustainability is currently very prominent in European legislation.[2] In May 2018, as part of its action plan for sustainable finance, the European Commission published legislative proposals regarding taxonomy, transparency, conduct of business and organisational requirements and benchmarks.[3]

In addition, in the context of a mandate issued by the European Commission, the European Securities and Markets Authority (ESMA) developed and made available for consultation, among other things, advice regarding the implementation of sustainability factors in the European regulations for investment funds as well as the integration of sustainability factors in the risk management of investment firms, in the identification of target markets and in the suitability assessment.

sustainable, such as sustainable investment funds. If disclosure requirements are too extensive, they could deter smaller providers from distributing sustainable products.

As regards investment supervision, BaFin primarily contributes, within ESMA, to the authority's proposals for implementing sustainability factors into the UCITS Directive[4] and the AIFM Directive[5], and to the corresponding Delegated Acts.

This concerns provisions regarding organisational requirements, requirements for business operations and regarding risk management. In my view, ESMA has adopted the right approach with its proposals of December 2018. In particular the principles-based approach ensures that the principle of proportionality is taken into account. As supervisors, we will have to take the size and performance of asset management companies and the amount of the assets they manage into account when defining supervisory requirements in future. Furthermore, we must not forget that sustainable financial products represent a relatively young and innovative market. A principles-based approach leaves room for flexibility in the adjustment of risk models by the supervised companies, which would allow for future developments to be taken into account. This is all the more important since a taxonomy for identifying sustainable investments has not yet been finalised.

The proposals included in the legislative package of the European Commission as part of its action plan for sustainable finance also relate to the conduct of business and organisational requirements under MiFID II.[6] What does that mean for investment firms?

The Commission's proposals aim to establish a consistent definition of sustainability and to increase sustainable investments. The proposals include, for example, the integration of ESG criteria into the identification of target markets and into the suitability assessment. For product manufacturers and distribution companies, this means that they will in future be required to incorporate ESG criteria in the identification of target markets and in product classification and will also, among other things, have to classify financial instruments according to whether they promote these factors. Furthermore, when providing investment advice, investment firms will have to ask clients whether ESG

2 See also page 11 et seq.

3 „Financing Sustainable Growth", https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN, retrieved on 11 April 2019.

4 Undertakings for Collective Investment in Transferable Securities Directive.

5 Directive on Alternative Investment Fund Managers.

6 Markets in Financial Instruments Directive 2014/65/EU, OJ L 173/349.

criteria matter to them in their financial investments and take this into account in the investment strategy and recommendation. At the end of 2018, ESMA published a consultation paper on these new requirements, giving market participants the opportunity to state their opinions. These opinions are currently being evaluated.[7]

What changes does the legislative package bring for clients, and what is BaFin's position?
Firms are already required to take the criteria specified by clients into account in their investment advice.

If clients value the environmental sustainability of their investments then this has to be taken into consideration in the investment recommendation even under current legislation. Transparency is important since it allows clients to compare options. Clients need to be able to distinguish between investments that are genuinely sustainable and those that are merely presented as such.

As a matter of principle, BaFin supports the European Commission's plan to promote sustainable investment. In all likelihood, more and more companies will offer sustainable financial instruments as a result of the Commission's legislative proposals. The topic of

7 See Info box "Sustainability in European legislation", page 35.

sustainability is on everyone's mind right now, meaning demand is likely to rise.

However, one thing must not be forgotten: the aim of the product governance and the suitability assessment requirements is to ensure that clients purchase products that are suited to them. And that will not change. The sustainability of an investment can therefore only ever be one part of a client's investment decision. If ESG criteria are not the client's top priority, then firms must equally take that into account in their investment recommendations.

It is important that we establish a common understanding of "sustainable investment" and that clients are able to invest sustainably if they wish to do so.

Prospectuses are an important source of information for investors. Should prospectuses provide investors with more information about the sustainability of their investments?
The EU Commission does have such aims, and BaFin supports this approach as a matter of principle. The Commission is, e.g., proposing a regulation that would, among other things, oblige asset management companies to disclose their attitude towards sustainability risks in the prospectus.[8] The Commission's 2018 action plan for financing sustainable growth provides for the mandatory inclusion of particular minimum information requirements in securities prospectuses for green bonds. Of course, we must guard against introducing disproportionately strict rules for issuers of sustainable financial products. It would not be acceptable for them to be required to meet more stringent information obligations than issuers of conventional bonds. This would make issuing green bonds unattractive, which is precisely the opposite of what we hope to achieve. In BaFin's view, we need to find a balanced approach that meets investors' information needs without placing an excessive burden on issuers in the form of additional obligations.

Should rating agencies be required to place a greater emphasis on sustainability criteria in their ratings?
Current legislation already requires that rating agencies consider all factors relevant to the assessment of the creditworthiness of a company or a financial instrument. This of course includes ESG factors. This requirement is contained in the current version of the EU Credit Rating Regulation.[9] If sustainability criteria that are not relevant to creditworthiness were to be weighted more heavily in the assessment of credit risk, errors in the analyses and therefore misallocation in the market could result. BaFin therefore does not support such an approach.

There are other means of achieving transparency for private and institutional investors with regard to the sustainability of corporate decisions and financial instruments, namely special ESG ratings. These are already used. However, what is missing are common standards for such ratings. The question is whether the industry should be left to regulate itself using its own standards, or whether legislation is required. This is an issue that should be discussed at the European level.

Ms Roegele, thank you for your time.

8 https://ec.europa.eu/info/publications/180524-proposal-sustainable-finance_en#investment, retrieved on 12 April 2019.

9 Regulation (EC) No 1060/2009, OJ L 302/1.

III

Sustainability risks are increasingly becoming a macroeconomic threat and a challenge with a financial stability dimension. Financial institutions, regulators and supervisors must take on this challenge at the international level.

Sustainability as a global challenge

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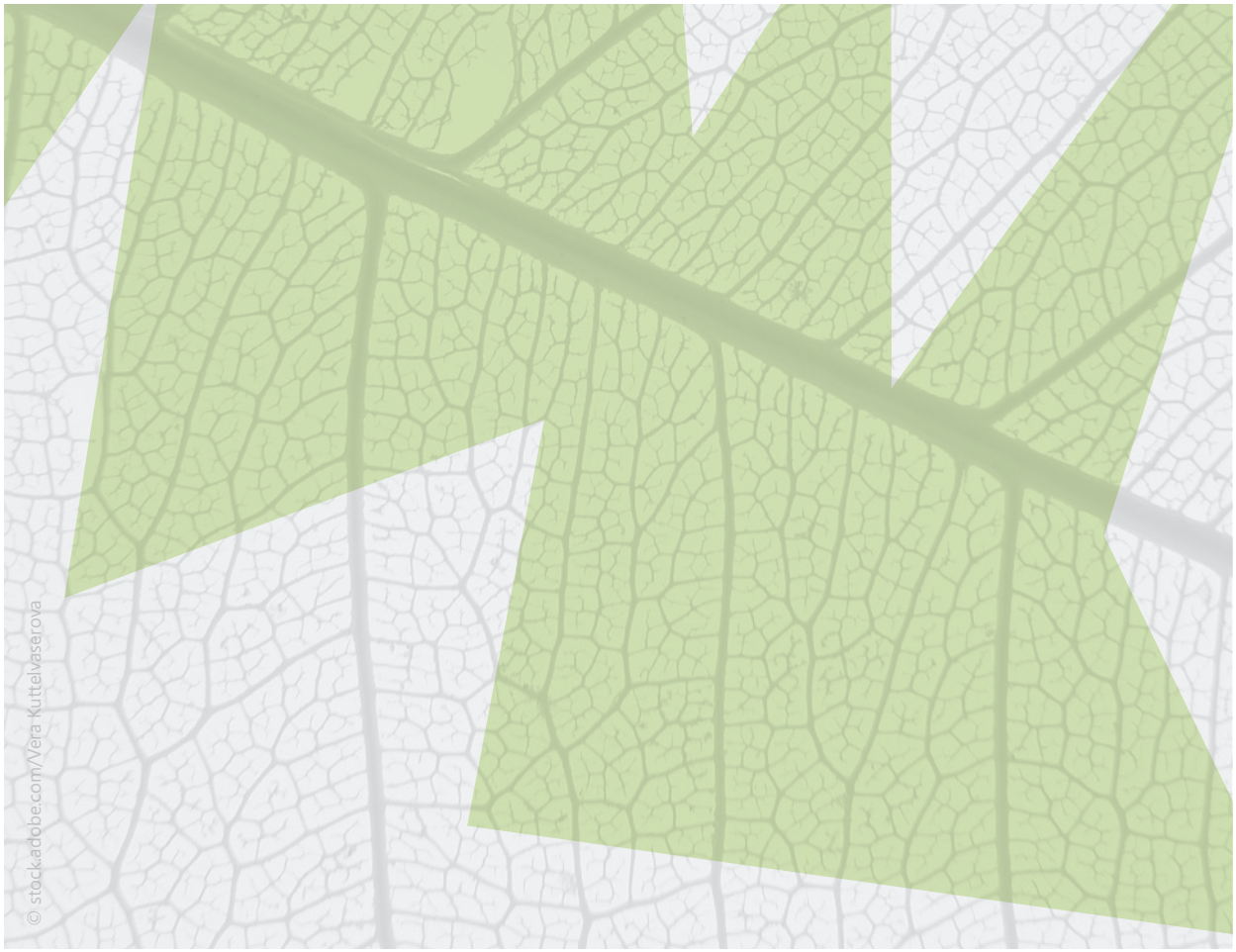
1 Introduction

What are your memories of the summer of 2018? Have you been to Beijing[1] or New Delhi[2] lately? Or even Venice, which is heavily affected by rising sea levels due to the city's architecture?[3] Is the amount of snow continually decreasing at your favourite ski resort, too?[4] Even if the costly drought in the summer of 2018 turns out to be a one-time occurrence, the global effects of climate change and environmental degradation cannot be ignored. There are clear indicators that we need to change the way we think – towards sustainability.

According to the German Council for Sustainable Development *(Rat für Nachhaltige Entwicklung)*, sustainable business encompasses business activities that preserve ecological resources while achieving welfare and social justice. According to the Council, it is based on a culture of sustainability characterised by a respect for nature, social knowledge and creativity, and reduces the use of natural resources to a level that is consistent with sustainable development.[5]

Until the late 20th century, little attention was paid to the environment in business endeavours, and this did not really seem to be necessary for a long time either. But now, the environment is starting to cost money. A wide range of scenarios illustrate the cost of environmental damage: the degradation of up to 60% of global cropland[6]; an increase in strong tropical

1 For information on the environmental situation in China: Fang, Yu et al., Climate change, human impacts, and carbon sequestration in China, in; PNAS April 17, 2018, 115 (16), pp. 4015-4020.
2 For information on the environmental situation in India: Agarwal, India's pollution challenges – Is the country's economic growth environmentally sustainable?, https://www.bpb.de/internationales/asien/indien/190209/india-s-pollution-challenges, retrieved on 15 April 2019.
3 UNESCO/UNEP, World Heritage and Tourism in a Changing Climate, 2018.
4 See Deutsche Welle, Ski resorts cling on against climate change, https://www.dw.com/en/ski-resorts-cling-on-against-climate-change/a-41972961, retrieved on 15 April 2019.
5 German Council for Sustainable Development, Nachhaltiges Wirtschaften : Zehn Forderungen (Sustainable business: Ten demands), https://www.nachhaltigkeitsrat.de/wp-content/uploads/migration/documents/RNE_Einladung_zum_Dialog_Nachhaltige_Wirtschaft_20-11-2012.pdf, retrieved on 15 April 2019.
6 CRO Forum, The heat is on – Insurability and resilience in a Changing Climate, https://www.thecroforum.org/2019/01/24/crof-eri-2019-the-heat-is-on-insurability-and-resilience-in-a-changing-climate/, retrieved on 15 April 2019.



cyclones of up to 55%[7]; dying boreal and tropical forests that clean the air[8]; a rise in ocean acidification of up to 150%[9]; water shortages, heat stress, the spread of diseases and the climate-induced migration of several hundred million people.[10] The risks that we are facing are more far-reaching, more diverse and more significant than can be described in this article.

As it is unlikely that we will succeed in keeping global warming within the target range of 1.5°C to 2°C,[11] the consequences in many cases will be worse than feared, which will result in substantial private losses and significant social costs[12] and require major efforts from both the public and the private sector.[13] These costs could be effectively reduced by making sustainable investments, cutting emissions and changing the way we lead our business and private lives.

Sooner or later, there will need to be a social, political, economic, sociological and cultural debate on whether and how we want to give value to what we can do to preserve natural resources. If added value is the driving force of the global economy, how can we ensure that the fight to stop exploiting and wasting resources, for instance, is given due recognition? As long as we continue to think in monetary terms, a price tag will have to be put on saving the planet – through the entire real economy value chain. This is precisely why the financial industry in particular can make a significant contribution to ensure that money is used sustainably and serves to preserve natural resources.

7 loc. cit. (footnote 6).
8 loc. cit. (footnote 6).
9 NOAA, Ocean acidification, https://www.noaa.gov/education/resource-collections/ocean-coasts-education-resources/ocean-acidification, retrieved on 15 April 2019.
10 Watts, Amann, et al., The 2018 report of the Lancet Countdown on health and climate change: shaping the health of nations for centuries to come. in: The Lancet 392 (10163), 2018.
11 loc. cit. (footnote 6).
12 The Economist Intelligence Unit, The cost of inaction: Recognising the value at risk from climate change. 2015.
13 See European Commission, A Clean Planet for all - A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy, 2018.

2 Transfer of risk into the financial market

It is certainly less the risk of a storm blowing off a roof or a flood hitting the data centre of a credit institution that is attracting the attention of regulators, supervisors and central banks. Rather, their attention has been drawn to the indirect risks involved – i.e. the risks resulting from the customer structure of financial institutions – or the indirect physical and transition risks of insurers and banks.[14] This is because, when combined, these risks can certainly pose a threat to financial stability.[15]

Sustainability risks are increasingly becoming a macroeconomic threat and a challenge with a financial stability dimension. Financial institutions, regulators and supervisors must take on this challenge. In BaFin's case, for instance, insurers, and reinsurers in particular, have been expected to address physical risks for a long time already. Insurance undertakings must at all times be able to settle claims for insured losses.[16] Another aspect is the long-term investment of policyholders' money, an area where insurance undertakings are increasingly focusing on sustainability.[17] Of course, the main focus for credit institutions and investment firms is the return on investments. But they are also increasingly taking into account the indirect physical and transition risks described above, such as the impact of sustainability risks on borrowers, in the decision-making process.

However, it should be noted that this is not only about the risks that we need to keep an eye on in terms of sustainability. There are also significant opportunities that the financial sector can take advantage of when generating and redirecting funds to meet sustainability goals.[18] If a societal challenge is to be shifted to the balance sheets of financial institutions, we also need to talk about the incentives and hedging systems that would be needed for this purpose, of course.

But how should financial supervisors position themselves with regard to this challenge for society as a whole? Various global regulatory initiatives are closely examining this question.[19] These initiatives are described below.

14 For more information on direct and indirect sustainability risks, see page 22.

15 ESRB, Reports of the Advisory Scientific Committee, Too late, too sudden: Transition to a low-carbon economy and systemic risk, No. 6, 2016; Finansinspektionen, Climate change and financial stability, 2016.

16 See section 75 (1) and section 97 (2) of the German Insurance Supervision Act (*Versicherungsaufsichtsgesetz* – VAG).

17 GDV, Berücksichtigung von Nachhaltigkeit in der Kapitalanlage (Considering sustainability in capital investments), https://www.gdv.de/resource/blob/33794/5834f5c3c5bb98e97abda6da60984810/wie-ste-hen-ver-si-che-rer-zu-nach-hal-tig-keit-in-der-kapi-tal-an-lage---download-data.pdf, retrieved on 15 April 2019; Seekings, Almost half the global reinsurance market divests from coal, in: TheActuary, 20 June 2018, http://www.theactuary.com/news/2018/06/almost-half-the-global-reinsurance-market-divests-from-coal/, retrieved on 15 April 2019.

18 See Article 2(1)(c) of the Paris Agreement on Climate Change; European Commission, Action Plan: Financing Sustainable Growth, 2018.

19 At European level: see page 14 et seq, page 32 et seq and page 36 et seq.

3 Global regulatory initiatives

3.1 Recommendations for action of the Central Banks and Supervisors Network for Greening the Financial System

The Central Banks and Supervisors Network for Greening the Financial System (NGFS), which both BaFin and the Deutsche Bundesbank are part of, has drawn up a list of recommendations for action aimed at supervisory authorities and central banks.[20]

Expectations placed on central banks and supervisory authorities

Firstly, central banks and supervisory authorities are advised to include climate-related risks within their mandates. They are invited to address these issues urgently and incorporate sustainability risks into their analyses, be it at the level of the financial institution or at macroprudential level. For this purpose, physical and transition risk transmission channels need to be mapped and key risk indicators need to be adopted in order to monitor these risks. A unified taxonomy of sustainable and less sustainable exposures would come in handy – but if we were to wait for a taxonomy that would be applicable worldwide, we would be ignoring the urgency of this issue.

Central banks and supervisory authorities are also urged to build capacity and develop analytical tools and methods for assessing sustainability risks. There is a need for a more data-driven approach on the one hand and more forward-looking observations and forecasts on the other. Even if they leave room for interpretation, sustainability scenarios will play a significant role for predicting potential developments not only on financial markets worldwide but also within individual business segments and institutions in the financial sector.

20 NGFS Report, April 2019.

According to the report, supervisory authorities should expect supervised institutions to develop strategies to achieve sustainability. Sustainability risks need to be understood, especially at management level, to ensure good corporate governance and appropriate risk management. This has a clear role to play in the internal and external communications of institutions, too. Of course, this also covers disclosure and reporting requirements and how they help promote market discipline in terms of sustainability.

Risk management

As far as the direct supervision of financial institutions is concerned, supervisors have adopted a number of approaches that have proved successful. If a risk has been identified – which can be assumed in the case of sustainability risks – awareness of this risk needs to be raised. Banks, savings banks, insurance undertakings and asset managers alike all need to analyse their business activities, portfolios and processes to determine whether they are exposed to sustainability risk. The consequences of these analyses will be as extensive as sustainability risks themselves. There is a new dimension to this, too: collateral used in the past to cover risks may now be subject to the same or even greater physical and transition risk – resulting in an additional burden.[21]

Finally, regulators and supervisors should examine which Pillar 1[22] and Pillar 2[23] requirements could be laid down or reformulated in order to address sustainability risks. Regulators and supervisors must ultimately ensure that the risks resulting from a changing environment are covered. But of course, they should also lead by example themselves: central banks should integrate sustainability factors into their portfolio management just as much as they expect institutions to do the same. It is also

21 PRA, Transition in thinking: The impact of climate change on the UK banking sector, 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, retrieved on 15 April 2019.

22 Article 501c of the revised European Capital Requirements Regulation II (CRR II).

23 Article 98(8) of the revised European Capital Requirements Directive V (CRD V). The CRR and CRD implement the Basel Framework in the European Union.

worth mentioning the State Secretaries' Committee for Sustainable Development's *(Staatssekretärsausschuss für Nachhaltige Entwicklung)* call to examine whether sustainability should be a key decision-making factor for the Federal Government's investments and the emission of green and sustainable German Federal Bonds *(Bunds)*.[24]

Data, data, data

"Bridging the data gaps" is one of the key recommendations made by the NGFS. Physical, transition and financial stability risk can only be assessed reliably on the basis of sound data and forecasts. For instance, those seeking a Pillar 1 risk premium must be able to convincingly demonstrate that investments in sustainable buildings, companies and funds etc. entail less risk than what would be allowed under current regulatory minimum capital requirements. Sustainability risks are still relatively new in data history. And it is also problematic that historical data does not reliably reflect future risks, especially in relation to climate change. This is particularly true if there is no linear function between a climate event and the probability of default, for instance.

24 Press release No. 63/19 of the Press and Information Office of the Federal Government, https://www.bundesregierung.de/resource/blob/975274/1584096/431430c72e9de0807da9671699bc6093/2019-02-26-pm-sts-ausschuss-data.pdf?download=1, retrieved on 15 April 2019.

We do not know whether the increase in risks will still be linear when a certain rise in temperature is reached or if risks will increase progressively or even exponentially in this case. It is also difficult to predict where and how often climate events will occur or how extreme they will be. For investors, it can make a significant financial difference whether a tornado will strike a particular area or not. Expressing what is to be expected in the form of data is virtually a mission impossible. But in spite of that, data histories and portfolio structures can at least help us to derive the potential effects of various scenarios; plausible conclusions and forecasts can be made, too. The main challenge is to lay down the requirements for data and scenarios.

At present, it is virtually impossible to provide the evidence required above, such as proof that sustainable assets entail less risk than those that are not sustainable. We suspect that there is a correlation between sustainability and the probability of default. But how reliable is this assumption? What is the basis for this? In the case of residential property, it is realistic to assume that a certain group of clients will opt for sustainability standards that exceed statutory requirements. Such clients are interested in sustainability within the meaning of sustaining value – and generally have good qualifications and a high income. Financing arrangements in such cases are likely to reflect that: they will be calculated prudently, have sufficient capital backing and will be less likely to default compared to others. But we do not have any experience when it comes to what will happen if the average customer also takes out a sustainable loan to finance real estate.

Another data gap can be found in the area of long-term investments. We do not know how investments in sustainable assets develop over the whole of an economic cycle – let alone the whole of a credit cycle.

Long-term financing is not uncommon. Infrastructure projects, industrial facilities and real estate tend to be financed over the long term. In this context, it is essential to take into account the fact that price developments may worsen and that supply or sales conditions may change. Future CO_2 emissions must be taken into account as well. However, forecasting the probability of default and loss given default will be a more difficult task due to new physical and transition risks. In any case, before new data requirements are introduced, there should be evidence that such requirements fulfil the desired objective of making forecasts more precise.

Transparency
Another NGFS recommendation that is closely linked to the issues surrounding data is the development of an internationally consistent climate and environmental disclosure and reporting framework. To ensure a well-functioning capital market, there needs to be transparent pricing mechanisms, based on information on risk management within the individual financial institutions and an idea of what climatic changes are to be expected in the regions where investments are made. Discussions are still underway regarding the extent to which requirements for the disclosure and reporting of sustainability-related information should be binding. However, the central banks and supervisory authorities that are part of the NGFS agree that minimum requirements should be laid down for sustainability-related corporate strategies, climate goals, measurable risk factors and key figures. If no internationally harmonised solution is found, there is a risk that the requirements set will diverge, rendering a comparison impossible.

3.2 Recommendations in the context of securities supervision

Although the NGFS mainly consists of central banks and banking supervisors, insurance and securities supervisors are represented here as well. This is because the NGFS also includes integrated supervisory authorities, such as BaFin, and "twin peaks" supervisory authorities, such as De Nederlandsche Bank, the Dutch central bank. However, it should be noted that there are sustainability initiatives taking place in the area of securities and insurance regulation as well.

For example, the International Organisation of Securities Commissions (IOSCO) or, to be more precise, IOSCO's Growth and Emerging Markets Committee (GEMC), held a consultation until 1 April 2019 on its paper "Sustainable finance in emerging markets and the role of securities regulators".[25] This paper is aimed at helping securities regulators and supervisors in developing and emerging countries in particular, as well as investors and asset management companies, to better understand sustainability-related risks. It sheds light on sustainability-themed capital market products, such as green and sustainable funds, social-impact funds and renewable energy investments. And of course, the report also focuses on the disclosure of information. In a list of 11 recommendations, IOSCO has set out what it expects supervisory authorities, firms and products to consider in relation to sustainability:

- Integration by issuers and regulated entities of ESG-specific issues[26] in their overall risk appetite and governance (Recommendation 1);
- ESG-specific disclosures and reporting (Recommendation 2);
- Data quality (Recommendation 3);
- Definition and taxonomy of sustainable instruments (Recommendation 4);
- Specific requirements regarding sustainable instruments (Recommendations 5 to 9);
- Integration of ESG-specific issues into the investment analysis, strategies and overall governance of institutional investors (Recommendation 10); and
- Building capacity and expertise for ESG issues (Recommendation 11).

25 IOSCO, Sustainable finance in emerging markets and the role of securities regulators – Consultation report, https://www.iosco.org/library/pubdocs/pdf/IOSCOPD621.pdf, retrieved on 15 April 2019.
26 ESG stands for Environmental, Social and Governance.

3.3 Cooperation between the UN and insurance supervisors

Global efforts for more sustainability are being made in the area of international insurance regulation, too. To give an example, the United Nations (UN) founded the UN Sustainable Insurance Forum (SIF) together with a group of insurance supervisory authorities. The SIF was launched in 2016.[27] It works in cooperation with the International Association of Insurance Supervisors. In 2018, they jointly released a paper on climate change risks to the insurance sector.[28] And in early 2019, the SIF and the IAIS started a new project: analysing the implementation of the Recommendations[29] of the Financial Stability Board's (FSB) Task Force on Climate-related Financial Disclosures (TCFD). The survey is aimed at obtaining a representative overview of the level of awareness and understanding of sustainability risks and the degree of implementation of the TCFD recommendations across different jurisdictions. This will result in a report assessing the information provided by insurers and highlighting any implementation shortcomings. The report is to be released in 2019.

27 Sustainable Insurance Forum, https://www.sustainableinsuranceforum.org/.

28 IAIS, Issues Paper on Climate Change Risks to the Insurance Sector, July 2018, https://www.iaisweb.org/page/supervisory-material/issues-papers/file/76026/sif-iais-issues-paper-on-climate-changes-risk, retrieved on 15 April 2019.

29 TCFD, Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures, June 2017, https://www.fsb-tcfd.org/publications/final-recommendations-report/, retrieved on 15 April 2019.

4 Sustainability within and beyond the financial industry

Globally, there is one key demand that is reflected across regulatory analyses and recommendations: investors and consumers need to be aware of sustainability issues and understand the risks that they entail. All stakeholders must be able to identify and manage sustainability risks, regardless of whether they are managing a credit institution or an insurance undertaking, or working as asset managers with their clients' money or creating their own portfolio. The knowledge, the experience gathered and the prediction of potential developments make it possible to identify opportunities that are associated with the transformation of business activities towards more sustainability. And although the prospects of achieving climate goals are currently bleak, it is clear that humans will continue to try to control their own destiny until we reach – or even go beyond – a point of no return. Communication, education, fair reporting and information improve our prospects for the future. This is because this is the only way to avoid a "Minsky moment", meaning that even though the causes are identified in the aftermath of a financial crisis, financial systems still automatically fall back into crisis time and again.[30]

This brings us to the responsibility of the financial industry, which sometimes feels that it is unfairly held hostage as far as sustainability is concerned. Politicians and society are right to expect that financial institutions contribute towards sustainability.[31] Besides the government, they are the most important players steering investment flows. But they are by no means the only ones that are required to take action and adjust to stricter requirements. The number of emission allowances under the Emissions Trading Scheme (ETS) is set to decline at an annual rate of 2.2% from 2021 onwards.[32] And the free allocation of manufacturing industry allowances is set to decrease from 80% of its allowances in 2013 to 30% in 2020.[33] This will put those producing emissions under growing price pressure.[34] The CO_2 emissions of new vehicles are expected to fall by 37.5% by 2030 as against 2021. This automatically means that more electric vehicles need to be manufactured – otherwise it will be impossible to meet fleet targets.[35] The European Union (EU) is even seeking to reduce emissions to zero by 2050.[36] It is therefore untrue that only the financial industry must achieve political climate goals.

Of course, sharing the burden on a "polluter pays" basis would be the best possible solution. Strong public finances to save the planet and make it a world worth living in without having to use private funds would be desirable, too. But in the end, what will also matter is whether people have fulfilled their responsibilities through their actions or not. In the area of financial supervision, we call this reputational risk. As supervisors, our sphere of responsibility – which includes ensuring the stability and proper functioning of the financial market – is clearly growing as new financial risks emerge. As a result of this, we are also delving deep into the sustainability debate.

30 Gabler Wirtschaftslexikon, Minsky-Effekt (Minsky effect), https://wirtschaftslexikon.gabler.de/definition/minsky-effekt-51732, retrieved on 15 April 2019.

31 loc. cit. (footnote 12).

32 European Commission, EU Emissions Trading System (EU ETS), https://ec.europa.eu/clima/policies/ets_en, (EU ETS), retrieved on 15 April 2019.

33 European Commission, Free allocation, https://ec.europa.eu/clima/policies/ets/allowances_en,retrieved on 15 April 2019.

34 ZDF, EU-Parlament für Emissionshandel-Reform (EU Parliament endorses emissions trading reforms) , https://www.zdf.de/nachrichten/heute/eu-parlament-stimmt-fuer-reform-von-emissionshandel-100.html, retrieved on 15 April 2019.

35 Heise Online, EU: Strengere CO_2-Grenzwerte kommen (EU: Stricter CO_2 limits are coming), https://www.heise.de/autos/artikel/EU-Strengere-CO2-Grenzwerte-kommen-4254038.html, retrieved on 15 April 2019.

36 European Commission, A Clean Planet for all - A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy, 2018.

IV

The world faces significant upheaval in the 21st century, caused by decades of blatant environmental exploitation. The necessary socio-ecological transformation will change our society in a variety of ways. Achieving this will require that three essential conditions be fulfilled: the consistent diversion of invested funds into transformative companies and projects; clever and consistent regulation that sets the right incentives; and a fundamentally new attitude on the part of financial market players – including a change in business practices.

Sustainability as an opportunity

Attitudes, regulation and new openings in the financial market

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1 Introduction

The world has changed and developed over the past century at a previously unmatched pace. Technological progress, mass education and involvement in societal change are accompanied by excessive exploitation of the natural environment and the destruction of the basis for our survival. This entails significant ramifications for the financial industry, which is intertwined with every economic sector through investment and lending.

Over the long term, it will no longer be possible to continue "business as usual" on the basis of familiar strategies – be it with respect to saving our planet or in view of our financial system. Every effort will have to be undertaken in the coming decades to bring about fundamental transformation in a wide variety of economic sectors if we want humans to be able to survive in every part of this planet in the long-run. This article will describe three essential conditions for that vital transformation and map out how each of those conditions is interlinked with the others. What is required is the consistent diversion of invested funds into transformative companies and projects; clever and consistent regulation that sets the right incentives; and a new attitude on the part of financial market players – including a change in business practices.

2 Where do our society and the financial markets find themselves today?

Given that the financial industry is intertwined with every sector of the economy around the globe, there is immense pressure to act in response to global, societal and ecological challenges. The two greatest global challenges out of the many we face are the limited availability of finite natural resources and climate change.

Research on global warming has made tremendous advances in recent years. It has highlighted that the primary hindrance to humankind's continued development is not the consumption of finite raw materials; instead, moderation is required because of planetary boundaries[1]. Once these boundaries are reached, there is the risk of irreversible damage to the environment and thus the basis for human survival.

According to the Potsdam Institute for Climate Impact Research (PIK)[2], four of the nine planetary boundaries have already almost been crossed as a result of human activity: climate change, loss of biosphere integrity, land-system change, altered biogeochemical cycles.[3] If things continue as they have been and we burn through all available finite resources, such as coal, oil and gas, we are only fuelling the climate crisis, rendering human survival on Earth impossible.

We will thus be confronted with significant upheaval in the 21st century, due to humankind's blatant exploitation of the environment over the past decades. Researchers and scientists thus speak of the necessity of social-environmental transformation if humans are to be able to survive on this planet in 100 years' time.

The following areas will undergo radical transformations, entailing a fundamental change in our economic structures and way of life:

- **Energy:** the energy supply will need to be decentralised, largely renewable and much more efficient with respect to the use of energy and electricity than at present. A much higher price per tonne for CO_2 will lead the way. This will require more decentralised electricity grids, sturdy infrastructure and a change in the way we heat our homes and businesses.
- **Agriculture:** we will need to reduce the share of meat in our diets and eat more regional and seasonal fare. Organic foods will become the standard. Rendering financial assistance available will be the key to transforming agriculture and improving incomes for farmers.
- **Transport:** this will go hand-in-hand with the changes to how we produce and consume energy. Researchers speak of "factor-10 mobility", i.e., that in future we will reduce the number of automobiles in urban areas to one-tenth of the current fleet. The agenda for the coming years includes intelligent, sustainable mobility, supported by digitalisation and considerable investment in rail infrastructure, public transport and new cycle lanes, alongside urban redevelopment and workplace transformation.
- **Consumerism:** the four fundamental principles behind self-sufficient lifestyles and consumer habits – decluttering, decelerating, disentangling and decommercialising – will lead to significant changes in the way we spend our money. This does not necessarily mean going without, but rather "living differently".
- **Finance:** a different attitude towards the incentives provided by money, alongside the greatest-possible transparency and a clear focus on financing the real economy and sustainable business models will be the hallmarks of the new financial industry. This

1 The concept of planetary boundaries was developed by scientists around the world and published for the first time in 2009. It identified nine global challenges such as climate crisis, ocean acidification, phosphorous cycle, deforestation and other land use changes, and biodiversity loss. Crossing these boundaries places the entire earth system and the basis for human survival in jeopardy.

2 www.pik-potsdam.de

3 See PIK, Vier von neun „planetaren Grenzen" bereits überschritten (Four of nine planetary boundaries now crossed), https://www.pik-potsdam.de/news/press-releases/four-of-nine-planetary-boundaries-now-crossed, retrieved on 18 February 2019.

means significantly reducing complexities that create no added value for society and instead financing socially and environmentally responsible ventures and innovations.

Let me be clear: the transformation of the financial industry is one of the most important levers of change in the other areas because the financial industry operates within the political framework to render public and private funds available so that change is possible.

According to the United Nations Conference on Trade and Development (UNCTAD), USD 3.3-4.5 trillion in public, private, national and international funds will be needed annually to finance the Great Transformation[4] and to fund the implementation of Agenda 2030 and its 17 Sustainable Development Goals (SDGs)[5] – in emerging economies alone. The total amounts are even greater: the European Union estimates that the annual funding requirement just to achieve its climate and energy targets by 2030 is EUR 180 billion.[6]

These amounts go far beyond national budgets and are more than a matter of fiscal debates in the German parliament. So this raises two questions: How can we – society in general, and the financial market specifically – achieve this? And what has to change?

4 The term "Great Transformation" was coined by the German Advisory Council on Global Change (*Wissenschaftlicher Beirat der Bundesregierung für Globale Umweltveränderungen* – WGBU) in its 2011 "Welt im Wandel" (World in Transition) report. That report states that human history has seen two fundamental transformations: the neolithic revolution, i.e., the invention and spread of farming and animal husbandry, and the industrial revolution, which saw the transition from an agricultural to an industrialised society. The next great transformation that must (and will) take place will be similar in terms of impact because the production of goods and our consumer habits and lifestyles must change so that the global greenhouse gas emissions can be cut to an absolute minimum over the coming decades and climate-friendly societies can emerge.

5 http://www.un.org/Depts/german/gv-70/band1/ar70001.pdf, retrieved on 20 March 2019. The UN has set out 17 Sustainable Development Goals at the economic, societal and environmental levels. The goals are to be realised through cooperation between states and governments, as well as companies, educational institutions and civil society.

6 See European Commission, Action Plan: Financing Sustainable Growth, 2018, page 2.

3 How can we achieve this?

In times of increasing complexity, we should all be wary of solutions that are too simplistic. On the other hand, different solutions can be expedient as long as they are not one-dimensional and instead complement each other.

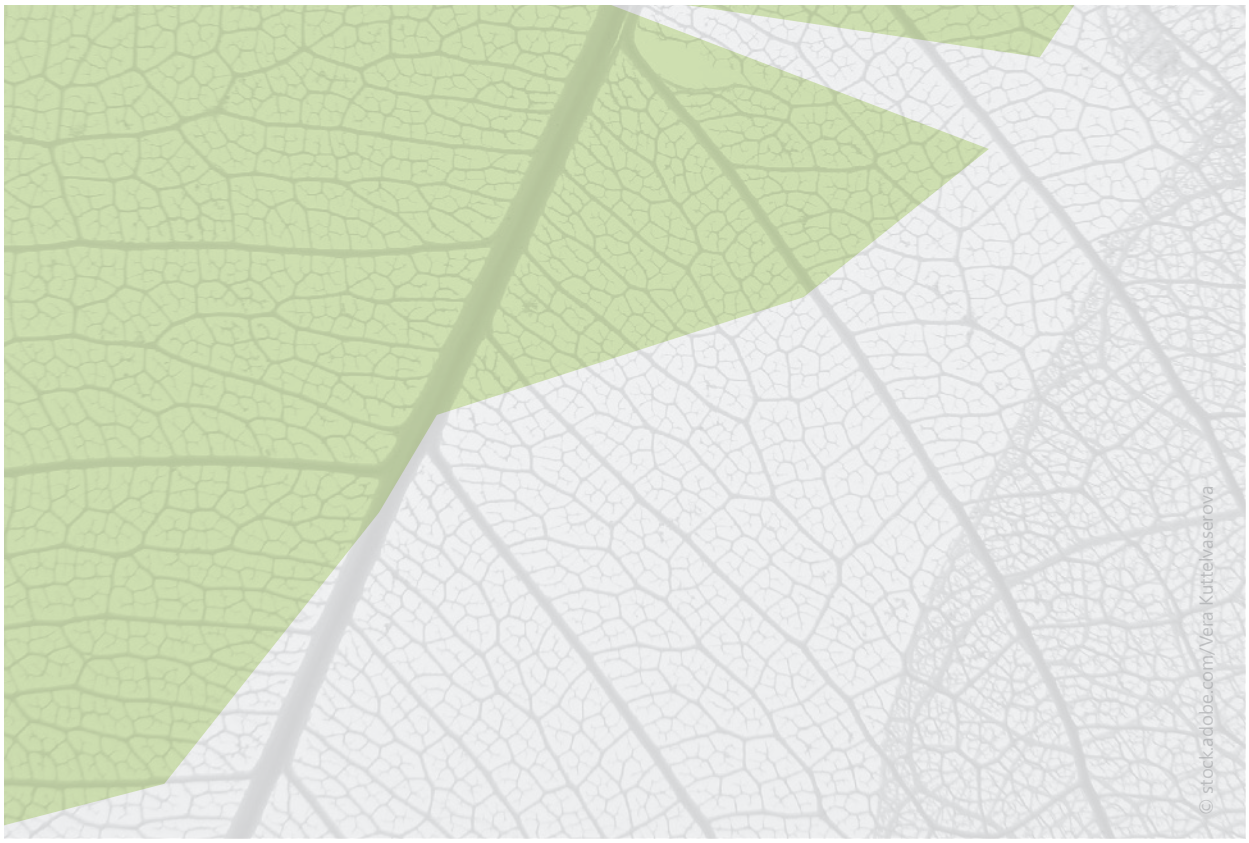
I would therefore like to outline three responses which, although they each operate on a different level, complement each other as a whole.

a) Diversion of financial flows

The European Commission stated its objective very clearly in its 2018 Action Plan on Sustainable Finance, and described it in unmistakable terms: the capital market should render a sustainable real economy possible. In its action plan, the European Commission elaborates on the challenges posed by climate change and the scarcity of resources and concludes that the key role played by the financial system lies in the diversion of investment into sustainable solutions. Put plainly and simply, we must steer funds away from climate-exacerbating, resource-wasting brown investments and towards environmentally friendly, socially compatible green investments.

Unfortunately, the European Commission's action plan fails to generally question the growth paradigm (for the time being), stating for example: "Specifically, this Action Plan aims to reorient capital flows towards sustainable investment in order to achieve sustainable and inclusive growth".[7] In my view, we will also have to have the debate in the coming years as to the nature of growth we want and what paths there are towards a non-growth-oriented economy. This is because the roots for many problems lie in a systemic crisis that is oriented towards exploitation and which sees the economy as the only structuring axis of society. This requires a

7 loc. cit. (footnote 6), page 2.



fundamental change, not "business as usual" under the cover of sustainability or the UN's colourful SDG icons.

Until our thoughts and actions become so radical, one potential avenue for consensus appears to be the diversion of private and public investment. In this respect, the SDGs can offer a sound path forward. For the first time, they spell out a precise definition of which societal goals can ideally be achieved through sustainable investment. They articulate the most pressing challenges of our age and hence also describe the relevant material issues for financial investors. This makes them the guiding benchmark for the responsibility of trust incumbent upon institutional investors around the world.

Beyond the ethical aspects, they are relevant from the perspective of risks and opportunities. It can be assumed that the UN's SDGs and the issues they address, such as climate change, social inequality and the use of finite resources, will gain significance going forward. These issues will undoubtedly be addressed in future regulation – preparations are already underway or on the horizon in certain countries; they will also be priced into financial products as potential systemic risks. At the same time, major investment will be increasingly channelled towards resolving our global problems, e.g., in renewable energy, sustainable farming and cities and infrastructure that are fit for the future. As a forward-thinking investor that is contemplating these aspects early on from a risk and opportunity perspective and with a determined attitude, Hannoversche Kassen expects to leverage considerable advantages in this regard.

b) Regulation, regulation, regulation – the way forward!

The regular laments of attendees at banking sector events over the past five years concerning the three great challenges (regulation, digitalisation and the low interest rate environment) bring to mind the film Groundhog Day: these three issues have always been a source of contention.

When pressure from Brussels began to climb in 2018 as a result of the recommendations of the European Commission's High-Level Expert Group[8] and the Action Plan on Sustainable Finance[9], virtually the entire financial lobbying industry (from the German Association for Occupational Pensions (*Arbeitsgemeinschaft für betriebliche Altersversorgung e.V.* – aba) and the German Insurance Association (*Gesamtverband der Deutschen Versicherungswirtschaft e.V.* – GDV) to the German Investment Funds Association (*Bundesverband Investment und Asset Management e.V.* –BVI) reflexively proclaimed: "We don't need any more regulations, we are burdened enough already. Just let us continue to police ourselves on a voluntary basis. The market can regulate itself best."

No, it certainly cannot! Over the past twenty years, waiting and hoping for the industry to regulate itself did not bring about any significant change. The share of sustainably managed funds is below five percent, sustainable financial advising is not widely offered by German banks, and the global environmental problems are worsening rather than improving.

Of course it is true that the sustainable financial market has taken great strides in the past twenty years and has posted solid growth – and all that without regulation. It is the avant garde that develops and implements ideas that serve as an example to the conventional market.

However, good ideas can only be implemented and scaled up if policymakers define clear standards, commit to sustainability[10] and set out unambiguous guidelines. This also involves determining which investments are no longer acceptable, or alternatively making them less lucrative by imposing equity premiums to price in many more risks to account for environmental, social

8 The High-Level Expert Group (HLEG) was established by the European Commission in 2017. It comprised experts from the civil, financial and academic sectors. Its objective was to recommend measures to the European Commission regarding how to make the financial market more sustainable. In July 2017, the HLEG published an interim report and it presented its final conclusions in January 2018. Based on that report, the European Commission then adopted its "Action Plan on Sustainable Finance" in March 2018.

9 loc. cit. (footnote 6)

10 See Kopatz, Ökoroutine. Damit wir tun, was wir für richtig halten (Eco-routine: So that we do what we think is right), 2018.

and economic factors than is the case for sustainable investments.[11]

Capital charges imposed on banks, insurers and pension funds provide important incentives. In recent years, policymakers and regulators have argued in favour of considerable privileges for government bonds in order to mitigate the euro and sovereign debt crises with the help of the financial sector. A gradual change in course would be desirable here, so that investors with a clear focus on sustainability can have more leeway to invest in assets other than government bonds and *Pfandbriefe*, such as investments in infrastructure and education.

Another key issue that policymakers must address with urgency is the internalisation of external costs. At present, there is no price to pay for the exploitation of land, for restoration of brownfield land and exhausted mines, for the remediation of environmental catastrophes and deforestation; there are virtually no prices on CO_2 emissions and no price is paid for ensuring adequate wages in many parts of our globalised economy. Many of the modern conveniences of daily life (closets full of clothes, flights to weekend getaways, wine from California and avocados from Costa Rica) can only be enjoyed in such excess because no price is paid to offset the social and environmental impacts within global value chains.

When it comes to this, everyone is more than happy to implicitly deny the mantra so often repeated throughout the financial industry of "rational markets". The markets are not rational! If a tonne of CO_2 were to cost EUR 180 – a price the German Environment Agency considers fair[12] – and not only EUR 22.30 (as at 31 January 2019), this would have a significant incentive effect. Sustainable business would sell itself.

Of course, we must also address mechanisms of social compensatory measures and how the impact on low-income earners can be mitigated, as called for by leading economists and Nobel laureates from the United States in January 2019.[13] Yet the upper third of the highest-earning in this country can certainly be asked to pay the real prices.

c) It's up to all of us.

Whether as a banker, a member of the board of directors of a pension fund or a department head in the Ministry of Finance: all of us – both private persons and officials – will have to face the fact that our consumer habits need to change and familiar processes have to be questioned. For decades, players in Germany's sustainability debate have focused on efficiency and consistency as guiding strategies for success. Preaching sufficiency was bad for business, kept the Green Party out of the German government and does not fit with the German economy's growth paradigm at all. For many years, the hope – particularly in technophile Germany – had been that only technological advancements such as the 3-litre engine or energy-saving light bulbs would be the solution. No constraints on consumption, just a whiff of efficiency or a green tinge would save the day.

Yet events of recent years have made it clear that the rebound effect negates all gains in efficiency and has caught up to all of us. While individual devices have become much more efficient and require less electricity, almost everyone has not only a landline telephone but also at least one mobile phone, a tablet, a PC and maybe even a gaming console – meaning that any gain in efficiency is eroded. Electricity use is rising, not falling, with a similar trend for general consumption of materials and resources.

11 See Stapelfeldt, Granzow, Kopp (ed.), Greening Finance. Der Weg in eine nachhaltige Finanzwirtschaft (Greening Finance: Towards a sustainable financial system), 2018, page 85.

12 Umweltbundesamt: Methodenkonvention 3.0. zur Ermittlung von Umweltkosten – Kostensätze (German Federal Environment Agency: Methodological Convention 3.0 for the Assessment of Environmental Costs - Cost Rates), https://www.umweltbundesamt.de/publikationen/methodenkonvention-30-zur-ermittlung-von, retrieved on 18 February 2019.

13 See item 5 of the Economists' Statement on Carbon Dividends, 2019, https://www.clcouncil.org/economists-statement/, retrieved on 1 March 2019.

However, if a true socio-environmental transformation is to succeed, we have to reduce our massive use of resources – significantly. Researchers at the Wuppertal-Institut have calculated this in their environmental footprint model, and have concluded that everyone needs to reduce their average annual environmental consumption from the current 30 tonnes to approximately eight.[14] For the financial industry this can (or should) mean: no more company cars, as these create the wrong incentives – instead, everyone should receive discounted rail tickets; no more flights between German cities, but instead conference calls and videoconferences; fewer pointless meetings where attendance is required but no effective decisions are taken.

14 See www.ressourcen-rechner.de (Programme launched by Wuppertal Institut für Klima, Umwelt, Energie gGmbH).

4 What has to change in the financial industry?

Having asked around in various segments of the financial industry, my impression is that much responsibility has been surrendered in the context of this debate. One argument I have often heard is that financial market players cannot save the world and are merely actors without any major agency to shape the debate. And many are wholly uncomfortable with the idea of taking on the central role in restructuring our economy. Why is that? And in what way must those responsible within the financial industry change their thinking and actions?

a) Pioneers of change are needed!
The far-reaching changes within the financial sector – brought about by increasing digitalisation, the rising number of fintech companies and the persistent low interest rate environment with the associated slow erosion of the interest rate business – pose the risk of over-straining the sector, yet also represent an opportunity for institutions. They have to leave their comfort zones and think outside the box. But this is not something they have been taught to do. Account openings, overdraft fees and derivative hedging transactions are part of their daily routine, but they often have too little interest in social issues and the role their institutions play.

Now more than ever, banks, insurance companies and asset management companies need people who question the existing order, who are prepared to leave the mainstream path, to consolidate different points of view and to test out new ways of solving problems. We need sustainable leaders – especially in the financial sector.

The Sustainable Leadership concept, which was forged primarily at the University of Cambridge and in Germany at the Leuphana University of Lüneburg[15], includes not only current leadership and organisational theories but also relevant sustainability strategies (consistency, sufficiency and efficiency). It comprises the following view of leadership: "Sustainable leadership seeks to find a long-term balance between economic and social objectives by steering employees' behaviour so as to fulfil the company's purpose, while at the same time ensuring that the required human resources – tangible (workforce of employees) as well as intangible (knowledge, skills and competencies) – are preserved for the long term."[16]

This very general definition is expanded upon by the seven core characteristics of sustainability leaders[17] at the Cambridge Institute for Sustainability Leadership:

1. Systemic understanding
2. Emotional intelligence
3. Values orientation
4. Compelling vision
5. Inclusive style
6. Innovative approach
7. Long-term perspective

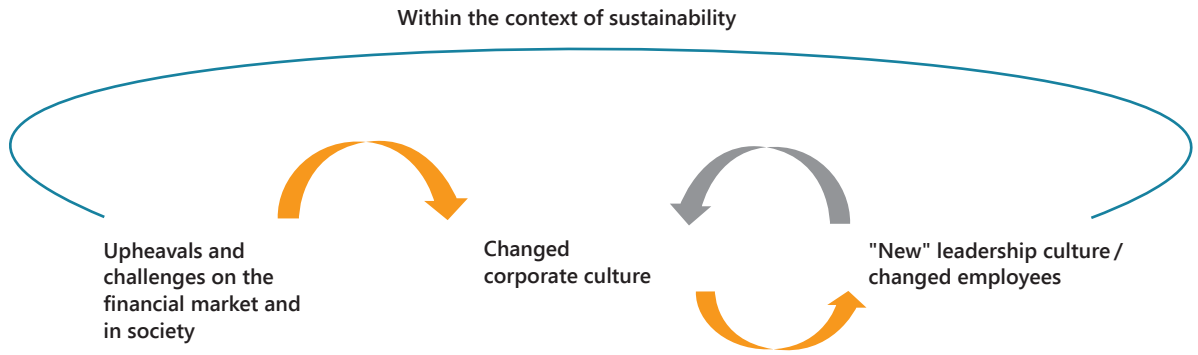
These demands represent a high bar against which to measure leaders. For two of these characteristics in particular, the ideal and the reality often diverge greatly: systemic understanding and long-term perspective. Very few leaders, especially in the financial industry, understand systems theory. Although they deal with a highly complex system such as the financial system on a daily basis and operate within highly regulated organisations (primarily banks and insurance companies), the predominant attitude is highly monocausal and marked by *homo oeconomicus* in the ideal market. They only have a below-average understanding of the interdependencies between the players, the different motives that guide bank customers and knowledge of the management of complex systems. They therefore require insight and a deeper understanding of the systemic outcome: the success of interventions in organised complexity is often slight.

15 At the Centre for Sustainability Management (CSM) with Prof. Stefan Schaltegger.

16 Hollmann, Sustainable Leadership, 2012, page 71.

17 See Visser, Sustainability Leadership: Linking Theory and Practice, 2011, http://www.cisl.cam.ac.uk/publications/leadership/sustainability-leadership-linking-theory-and-practice, retrieved on 25 February 2019.

Figure 1: Changes in society and companies within the context of sustainability



Source: own data

The same goes for the requisite long-term perspective: in times of quarterly reporting, constant observation and commentary through social networks and remuneration systems with a focus on the short term, a long-term approach is left by the wayside, as is open, creative thinking for the future and deliberately testing out different possibilities.

Team diversity is also in demand – as far as gender, experience, academic background, cultural heritage and problem-solving skills are concerned. Bankers, exit your (environmental) bubbles! What the financial institutions of this Republic urgently need is people with an entrepreneurial spirit, self-efficacy, motivation and stamina, as well as respect for other people's ideas. We need change agents – especially in the financial industry.

b) Knowledge and audacity required!

Transformation research aims to discover just what it is that change agents have to be able to offer. "The art of conceiving another reality and translating it into change requires a special mixture of knowledge, attitude and specific skills."[18]

If we first consider the aspect of knowledge, we may at this point critically ask where and in what quantity and quality the topic of sustainable investment has been part of training courses, economic studies or special training programmes for board members in the financial industry in recent years.

One would have to look very hard to find it! Tomorrow's leadership elite is being educated at various institutions and the topic of sustainability does not appear on a single PowerPoint chart. Perhaps as a voluntary element for a fraction of students and bankers – at most.[19] It's a good thing that regulation will be setting out new requirements in this regard. The EU's Action Plan[20] envisages giving greater priority to the issue of sustainability in financial advisory services than in the past and making it an integral part of advice, similarly to how risk appetite and expectations for returns are gauged. This will entail comprehensive training for all bank advisors to ensure that they are prepared to offer advice.

18 Schneidewind, Die Große Transformation. Eine Einführung in die Kunst gesellschaftlichen Wandels (The great transformation: An introduction into the art of societal change), 2018, page 460.

19 See Bergius, Tunnelblick in der Lehre und Forschung (Tunnel vision in education and research), 2018, page 2, https://www.handelsblatt.com/service-angebote/newsletter/nachhaltige-investments/business-briefing-nachhaltige-investments-vom-februar-2018-02_bbni/20934486.html, retrieved on 6 March 2019.

20 loc. cit. (footnote 6), page 8.

In addition to knowledge, specific skills are required to bring about change in conventional industries – including the financial sector. The expertise required is not so much the standard business administration and financial market theories but rather competences in organisational development, moderation skills and theories covering new, forward-facing forms of organisation, be it holocracy or reinventing organisations.[21] It is not so much the traditional skillsets that will be required from future banking and insurance executives, since these skills can always form only a foundation; rather, future executives will have to work with employees to establish new, agile, and resilient organisations that render financial services for people and enterprises.

However, the key matter in sustainability is not only expertise and skills, but also attitude.

c) Attitude is everything

Over the past 20 years in many expert panels with executive boards and workshops with representatives of conventional banks, I have seen a lot of apprehension about sustainability in investing. A few quotes from a workshop with pension funds' CFOs last year illustrate the widely-held defensive attitudes:

21 Both approaches seek to establish a radically different organisation and decision-making structure within enterprises, which relies more on self-management than on hierarchy, paired with the principles of transparency, usefulness, a holistic approach and participation.

- "The financial industry is not here to solve climate change."
- "Sustainability ratings are costly, time-consuming and highly individual."
- "We only invest in democratically run states."
- "We only want a little bit of sustainability."

Or as the investment policy of a major pension fund for one DAX company puts it: "When investing, the pension fund assumes that the state enacts laws and creates regulatory frameworks that lead to securities issuers and companies generally conducting themselves in an ethical, social and ecological manner that promotes the common good."[22]

Concealed behind this is the attitude that responsibility as a major trustee for funds is completely in the hands of the state. It pretends that money is neutral, a merely objective, purely logical means of payment. As if the investor has no power or agency whatsoever and need only worry about the wondrous creation of more money. They act as if financial investment were simply following quantitative mathematical principles in a black-and-white world. But this is not the case.

Anyone who has sat around a table with colleagues to determine the best, safest, most profitable investment for a defined time knows that this is anything but logical, unambiguous and clear. This is a rather discursive process, whereby various arguments are weighed against each other – there is no sense of certainty that one is right. When we make investment decisions – even conventional ones – we always make assumptions about the future and the uncertain development of the markets.

Therefore, I would like to call on all members of executives and employees at the banks, insurers, Pensionskassen, fund companies, rating agencies, foundations, supervisory authorities and ministries to decide on an attitude for themselves: What sort of a world do you want to live in? And how can you personally steer money in a sustainable direction?

Financial market players should not pretend that they have nothing to do with real life! They finance the economy and thus play a crucial role in deciding the direction in which the economy and society will develop! "Those who finance the economy help to decide whether our economy and way of life will be sustainable."[23]

According to a current study by Kommalpha,[24] the total financial assets held by insurance undertakings and institutions for occupational retirement provision in Germany amounted to approximately EUR 2,802 billion as at 30 June 2018. This represents more than eight times the German federal budget for 2018 (EUR 335.5 billion)[25] and an increase by EUR 1,170 billion in just under 13 years. From a purely quantitative perspective, an attitude and assumption of responsibility for shaping investment is essential: money makes the world go round. At the same time, these dimensions beg the question: who legitimises the investments of insurers? And who controls the power that comes with this?

22 RWE Pensionsfonds, Erklärung zur Anlagepolitik 2019 (RWE pension fund: notes on 2019 investment policy), https://www.group.rwe/-/media/RWE/documents/01-der-konzern/pensionsfonds/Erklaerung-zur-Anlagepolitik-2019.pdf, retrieved on 1 March 2019.

23 Bergius, Geldanlagen und Investoren hinterfragen. Finanzen als Hebel für zukunftsfähige Ökonomie und Gesellschaft (Questioning investments and investors: Finance as a lever for sustainable economy and society), 2018, page 83.

24 Kommalpha AG, Versicherungen und Pensionseinrichtungen. Analyse der Vermögensverhältnisse 2005 bis 2018 (Insurers and pension funds: Analysis of financial position from 2005 to 2018), 2019, http://www.kommalpha.com/kommalpha/studien.php, retrieved on 6 March 2019.

25 https://www.bundesfinanzministerium.de/Monatsberichte/2019/01/Inhalte/Kapitel-3-Analysen/3-4-vorlaeufiger-abschluss-bundeshaushalt-2018.html, retrieved on 18 March 2019.

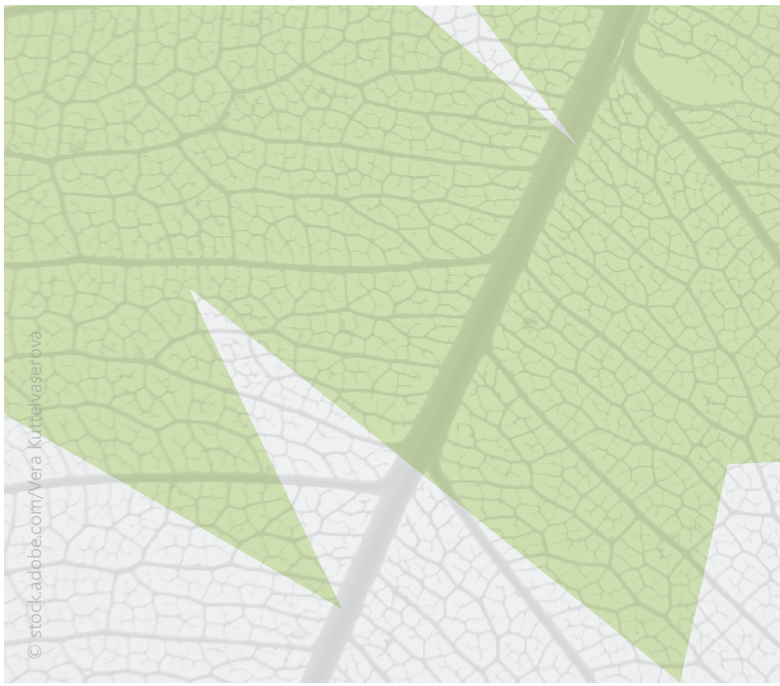
5 A small cog in a large machine

I myself am a member of the Board of Directors of Hannoversche Kassen, where I am responsible for investment. We are a relatively small player with total assets of EUR 422 million. Nevertheless, for many years we have had a clear sustainability strategy. This began with defined social, ecological and ethical selection criteria for all asset classes and investments. At the beginning of 2019, we became the first pension fund in Germany to publish a Transparency and Investment Report[26], in which we report how and where we invest our funds for policyholders.

We at Hannoversche Kassen have taken this first step towards increased transparency with the aim of promoting discussion of responsible and sustainable investing, as well as to disclose the conflicting objectives which shape our actions every day when it comes to sustainable investment in the low interest rate environment. For one thing is clear: however ambitious we already are, our approach still has considerable room to grow because a truly sustainable portfolio should have much greater social impact than does our current (for the most part) highly conventional bond portfolio. Recent years of preferential legal treatment for government bonds have (unfortunately) slowed us down significantly in this respect.

We aim to continue carefully reallocating our portfolio towards greater high-impact sustainability in the coming years. We do so in close cooperation with our members and policyholders, because ultimately we manage their future pension claims as a trustee.

We are often asked how such a small institution as ourselves manages to bear the significant effort and additional expenses for sustainability research. Certainly, there are additional costs, but we consider them part and parcel of risk provisioning. Good, critical sustainability ratings provide us with a 360-degree view of our investments and warn us off from certain ones that do not qualify due to a poor ESG performance.[27]



In addition, we do not experience any cuts in net interest, but rather are well within the averages for all *Pensionskassen*. What is currently making our lives difficult is not strict sustainability criteria limiting the pool of available assets for the portfolio. Rather, it is the long-persisting low interest rate environment and the preferential treatment for presumably safe government bonds.

Our aim is to network with other committed *Pensionskassen* and institutions for occupational retirement provision to enable us to exchange ideas and learn from each other, and to be open about investments which currently still do not fulfil our own standards. Hannoversche Kassen is but a small cog. And yet we believe that our special mix of attitude, expertise and skills enables us to make our contribution to change. The coming years – if not decades – will be challenging for us all.

26 https://www.hannoversche-kassen.de/aktuelles/Erster-Transparenz-und-Investitionsbericht-, retrieved on 18 March 2019.
27 ESG: environmental, social and governance.

6 Conclusion

"The worst thing we can do is nothing, and to allow things to continue along the currently dangerous path. The necessary changes must be aimed at a new paradigm with respect to our relationship with the earth and nature, as well as the way we produce and consume. […] More than ever before, the word revolution in its true meaning would be fitting here."[28]

So, to paraphrase Leonardo Boff, do we need a revolution in the financial markets or a revolution in the thinking of those responsible for finance?

As I have argued in this article, three things need to change fundamentally: we need to systematically divert invested funds into transformative enterprises, we need a coherent political framework for regulation, and we need a new attitude and a clear will to shape change within the financial sector.

Policymakers have clearly stated their commitment to the UN's Sustainable Development Goals (SDGs) discussed above, and clearly defined the framework for future development paths; in the day-to-day business it is now more important than ever to further define and implement this framework through focused, verifiable and knowledge-based approaches in the respective policy fields. To achieve this, we need politicians to show some backbone and take on lobbyists from powerful traditional industries. This is because the truths that they have to legislate and enforce will result in profound changes in every aspect of our lives.

Regulation follows politics. It brings policy to life and measures performance against set targets. And certainly, the entire regulatory framework for the financial markets has to be constantly monitored to ensure it is fit for purpose and guarantees proportionality.[29] But specifically with respect to achieving ambitious sustainability targets, it can and must continually raise the bar, because it is no longer possible to ignore the fact that ecological boundaries are being irreversibly crossed.

Financial market players themselves must take action. In this era of momentous global change, in times of uncertain future prospects, in times of populism and nationalism, those responsible in the financial industry often tend to bury their heads in the sand and structure their investments as inconspicuously as possible.

But waiting is not an option. It is vital that we take responsibility for our own actions, which can sometimes lead to poor decisions, to take responsibility for our own role as investors in this world and to acknowledge the incentives money offers. This is the attitude that financial market players must have in the 21st century.

It requires responsible people in the financial industry who want to shape this world, who want to engage in debate to find the right solutions and who want to develop new, sustainable financial institutions. After all, money is never neutral; it does what we tell it to do.

28 Leonardo Boff, Überlebenswichtig. Warum wir einen Kurswechsel zu echter Nachhaltigkeit brauchen (Essential to survival: why we need to change course for true sustainability), 2015, page 10.

29 This is similar to Fredmund Malik's "systematic taking out the trash". This concept describes the necessity for every institution to ask itself the following question once a year: "Which of all the things we do today would we not start again if we did not do it already?" This could relieve the burden on small institutions in particular and make it clear which regulation is still appropriate. See Malik, Führen, Leisten, Leben. Wirksames Management für eine neue Welt (Lead, perform, live: effective management for a new world), 15th ed., 2003, page 373 et seq.

V

Sustainability, which even a few years ago was a niche topic, is now one of the major priorities of finance executives and regulators. It is now widely understood that sustainability is essential to ensure economic prosperty and social cohesion. Yet, these objectives may mean a fundamental changing in many areas of the economy and financial markets.

Finance and sustainability: the end of "business as usual"

Author

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1 Introduction

Rarely has an issue pushed its way onto the financial sector's agenda so forcefully as sustainability. Even just a few years ago, it was still a niche topic dealt with by a handful of staff at banks, insurers and asset managers. Things were not much different among financial regulators, and boards of directors; supervisory boards and financial supervisory authorities touched the issue at all mostly tangentially.

This has now fundamentally changed. Today, sustainability is a core topic that managers across the board count among their top priorities. It is also a key issue in financial policy legislation and for the European Commission. Sustainable finance is one of the most important fields of activity for the responsible EU Commissioner, Valdis Dombrovskis, along with the Directorate-General for Financial Stability, Financial Services and Capital Markets Union reporting to him.

The aim of a sustainable economy is to foster prosperity and secure it over the long term against economic, social and ecological risks. Climate change has a large role to play here, but there are also other environmental risks that jeopardise our prosperity over time. These include the advancing extinction of species along with the loss of fertile agricultural land to agri-business. Our finite natural resources are also under threat from overfishing of the seas and increasing marine pollution. All of this calls into question the economic, ecological and social sustainability of the high standard of living we currently enjoy.

Alongside the ecological aspect to sustainability, it is important not to lose sight of its social dimension. Its significance is reflected in political debates among our European neighbours: the Yellow Vest movement in France demands that wealth be fairly distributed between core

and peripheral regions government members in Italy are pressing for the introduction of a universal basic income in order to provide some security to those in need, while in Germany thousands of people have been protesting in view of rising rents in the major cities. Other overarching issues include maintaining jobs and social security, as well as the increasing gap between rich and poor. Even in the US, home of market capitalism, the possible introduction of a wealth tax is being discussed. Why? Because increasing numbers of politicians are seeing wealth inequality as a risk for democracy and social stability. This offers further proof that past economic development has been partly unsustainable, and should not continue as it is. Given all these signals, we cannot keep on with "business as usual" for the economy and globalisation. There needs to be a refocusing of the economic and financial management of globalisation, a challenge which neither the financial system nor individual economic stakeholders can shirk back from.

Sustainability must therefore always be conceived of in terms of a triad of economic, ecological and social factors. These three aspects form a whole, and must not be pit against one another.

But why was it that sustainability in general and climate change in particular established their relevance so quickly within the institutions, becoming a new challenge for the financial system? Why did the European Commission set up a High-Level Expert Group on Sustainable Finance and incorporate its recommendations into proposed regulations in record time? Why did the European Parliament instruct the Environment Committee and the Economic and Monetary Affairs Committee to consider this issue and draw up initiatives? Why have central banks created a network and why has the FSB (Financial Stability Board) of the G20 countries set up a task force in this area? Why has the issue been placed on the agenda for the most recent annual conferences of BaFin, EIOPA (European Insurance and Occupational Pensions Authority) and other supervisory bodies?[1]

1 The original names of these bodies in English are: EU High-Level Expert Group on Sustainable Finance (HLEG Sustainable Finance); Financial Stability Board Task Force on Climate-Related Financial Disclosures (TCFD); Central Bank Network on Greening the Financial System (NGFS).

2 The breakthrough in 2015

The meteoric rise of sustainability in the financial system might appear surprising at first glance. After all, the issue has been around for a long time . It has been about 30 years since the Club of Rome referred to the significance of sustainability in its report "The Limits to Growth". In most parts of the world, economic growth – so the basic argument goes – is quite simply unsustainable and will eventually collapse, as it does lasting damage to critical natural resources, or destroys them completely.

At more than 20 years old, the climate debate is also nothing new. This is already apparent from the fact that the Paris Climate Agreement was concluded at COP21. The abbreviation COP stands for "Conference of the Parties", a general term used by the United Nations, which encompasses both countries and institutions. The number 21 only means that the annual conference was being held for the twenty-first time. However, for twenty years only scientists, ecologists, some select industrial sectors and a few environmental politicians addressed climate change and other sustainability issues.

What was it that happened during year 21 that brought the financial system into the spotlight? It was the inclusion of one plain and simple clause in Article 2 of the Paris Agreement of 15 December 2015. According to the agreement, financial flows would have to be redirected in order to achieve climate goals. The Article provides that: "This Agreement […] aims to strengthen the global response to the threat of climate change, in the context of sustainable development […] including by […] making financial flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development."

It is remarkable that the foreign ministers address financial flows, as they normally do not deal with this issue. It is even more remarkable that, in doing so, they raised the question as to how global finance flows can be redirected and rendered compatible with sustainable development. Shortly after the Paris Agreement, many leaders concluded that this redirection of financial flows was required not only from a climate perspective but also in order to ensure general economic sustainability. Only a small step was therefore required in order to establish a link with the much broader debate within the Club of Rome, and with recent United Nations sustainability objectives. It became clear that the way in which financial flows are to be directed must be examined across the board, not only in order to slow down climate change but also to allow wealth to develop sustainably in economic, ecological and social terms.

The field of sustainable finance was born.

3 The significance of the financial system within the debate on sustainability

Why is the financial system so important for sustainability? The financial system plays a key role in the economy, with banks, insurers and asset managers operating as financial intermediaries. These bodies are involved in virtually all investmentdecisions other than those financed out of own funds.

In addition, since financial institutions are heavily regulated and subject to individual supervision, it seems natural to policy-makers to intervene in an attempt to redirect capital flows.

Naturally, this must not undermine the principles of the market economy and decentralised decision-making. But the unavoidable – and never truly neutral – impact of regulation on the market economy is clear; for instance, in the rules on capital requirements for government bonds. Banks and insurers may hold any government bonds in the European Union without having to set aside any capital, while there are capital requirements for all types of corporate bonds. This rule applies despite the restructuring of Greece's debt, which has involved haircuts worth hundreds of billions of euros. Moreover, it also applies even though some countries would be insolvent without monetary support. If regulation can never be entirely neutral anyway, so the argument goes, why should it not be focused on the principles of sustainability?

4 The significance of sustainability for the financial system

Why, on the other hand, is sustainability so important for the financial system? There are essentially three reasons. First, many decisions within the financial system have long-term consequences, such as those concerning investments, loans and other forms of corporate financing. Their success depends upon an ex ante examination of risks over the medium or long term, and often involves looking a number of years into the future. It is not only the specific instrument that matters. It is just as important to recognise systemic connections and to look beyond the horizon of pure financial arithmetic, taking account of the broader economic, social and even environmental context.

The costliest example of a lack of economic sustainability in the last two decades was the US subprime mortgage disaster. Hundreds of billions in loans were unsustainable, both on a financial and a socio-political level. Mortgage loans were granted to US residents with no other assets, often without any income and sometimes even without a job.

European banks invested hundreds of billions of euros in the US, having been blinded by sales pitches, misled by incorrect information from rating agencies and spurred on by pressure to make money. In return they received securities which had to be largely written off when the bubble burst, and partly refinanced by taxpayers. As early as the summer of 2008, the immediate write-offs alone on US subprime loans for the 20 hardest-hit European banks amounted to around 100 billion euros[2] – and this would be followed by many further write-offs over the course of the crisis. The way in which junk mortgages were financed is a dramatic example of what happens when sustainability considerations are ignored. In addition, the crisis also called into question the structures and practices of financial market regulators and supervisory bodies.

The second reason why sustainability is essential for the financial system lies in its social significance. Sustainability is a mainstream issue, sailing with a truly powerful political and social wind in its sails, supported by practically all parties, generations and social strata. This reflects the fact that individual citizens and society as a whole wants to safeguarde the future. People as forward-looking beings have a fundamental need, both individually and also at the societal level, to know that the sustainability of their continued existence has been secured. It is therefore important for the financial system to engage with this issue in order to make sure that it does not end up on the wrong side of the debate.

The third reason follows on from the second. Having been partly discredited during the financial crisis, sustainability now offers the opportunity for the financial sector to rebuild a positive relationship with society. There is an opportunity here for it to position itself as part of the solution and to work actively towards achieving greater financial, social and ecological sustainability.

Regarding the issue of sustainability and the financial crisis, it should be noted that banks were in part wrongly branded by the public and in the media as having been responsible for causing it. Actually, the banking sector was just the place where the crisis became visible to the general public, as banks were the ones holding worthless assets on their balance sheets. However, primary responsibility for the financial crisis lay with the financial markets and rating agencies. They had bundled together substandard mortgages into complicated structures, valued these incorrectly and assigned them misleading ratings. This is what allowed the build-up of pressure on banks to buy these ostensibly high-yield securities with purportedly excellent creditworthiness. Naturally, managers at banks went with the flow, if for no other reason than the fear of missing out. However, anyone who overlooks the actual cause of the global financial crisis in financial markets is not telling the full story.

This is important, not least because it has been repeatedly demonstrated that financial markets – and not financial institutions – represent the greatest risk

2 This figure represents only a fraction of the overall write-offs during the global financial crisis, and includes only direct write-offs on subprime loans by banks such as Deutsche Bank, Dresdner Bank, Commerzbank, IKB, Landesbank Bayern and WestLB, along with HSBC, Lloyds, Royal Bank of Scotland, Credit Agricole, Société Générale and others. Source: Bloomberg, 12 August 2008.

to the sustainability in the financial system. This risk is fuelled by short-term thinking, a focus on quick returns and the constant pressure exerted on businesses to prioritise short-term profits . Those looking to redirect capital flows in order to further sustainability will first have to take on the financial markets.

This is an important point, as debate is still very heavily focused on banks, insurers and pension funds, thus bypassing the real issue. The greatest danger to stability and sustainable growth lies in financial markets.

5 Events to date

Anyone who engages with the issue of sustainability and finance will quickly notice that the field is so broad it can be hard to make out one side of it from the other, being populated by a practically limitless number of proposals and initiatives. However, this complexity can be reduced if the issue is broken down into two core questions. First, how can possible sustainability risks for the financial system be better understood, made more transparent and monitored? Second, how can the financial system enhance the sustainability of economic prosperity, in particular through increased investment? In a nutshell, this means "understanding risks" on the one hand, and "taking action through investment" on the other. These are the two points of reference within debates on sustainability in the financial system. That the latter issue is by far the more important one, and also the thornier.

In 2017 the EU set up the High-Level Expert Group on Sustainable Finance, which presented a comprehensive report at the start of 2018 containing numerous recommendations. Thereafter, in the spring of 2018 the European Commission presented an action plan[3] transforming a number of these recommendations into proposed regulations and policy measures. Some of these have already come as far as the decision-making stage, while others are still being discussed by legislators. Owing to the European elections, most of these recommendations will only be implemented after the new Commission has taken office.

A whole range of proposals and measures are being debated, which should help to achieve a better understanding of sustainability and of the related risks. The specific goal is that businesses in both the real economy and in finance should engage intensively with the issue of sustainability, and discuss and communicate its influence on corporate strategy. Supervisory boards should also consider this issue at regular intervals. Supervisory bodies should develop methods in order to identify sustainability risks. Investors should obtain more information as to whether or not businesses are focused on sustainability. Corporate reports should explicitly address sustainability issues and incorporate them into financial reporting if possible.

The Commission specifically proposes, *inter alia*, the following:[4]

- **Governance:** The Commission examines the extent to which banks, insurance undertakings and pension funds take sufficient account of sustainability aspects, both within their general business decision-making and also as part of risk management. EIOPA is currently consulting on whether sustainability is sufficiently taken account of within regulations applicable to the insurance industry, and the Commission is contemplating incorporating the results into the review of Solvency II in January 2021.
- **Ratings:** The Commission has instructed ESMA (European Securities and Markets Authority) to analyse the financial ratings market and to assess whether environmental, social and regulatory considerations are sufficiently taken into account. The Commission is contemplating including these criteria in its guidelines on disclosure for credit rating agencies and to adopt additional guidelines, where necessary.
- **Reporting:** The Commission is contemplating expanding the already comprehensive reporting on non-financial information by companies and to include reporting on possible climate risks in financial reports, as proposed by the FSB Task Force on Climate-Related Financial Disclosures (TCFD).
- **Financial analysts:** The Commission plans to carry out a comprehensive study into how sustainability aspects are taken into account by financial analysts.
- **Fiduciary duty:** The Commission plans to overhaul the duties of institutional investors and asset managers in relation to sustainability aspects. In particular, its goal is that institutional investors and asset managers should expressly take sustainability

3 European Commission, Action Plan: Financing Sustainable Growth, COM (2018) 97, of 8 March 2018, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN, accessed on 14 April 2019. See also Dr Levin Holle, Sustainable Finance auf globaler, europäischer und nationaler Ebene – eine Einschätzung des Bundesministeriums der Finanzen (Sustainable finance at the global, European and national level – an assessment by the Federal Ministry of Finance), page 11.

4 loc. cit. (footnote 3).

aspects into account in decision-making processes in order to make the way in which these sustainability factors are considered more transparent for end investors.

- **Enhancing supervision:** Many supervisory authorities in Europe have started to engage in detail with the issue of sustainability and to take greater account of it in supervisory activities. The Commission is encouraging the EBA (European Banking Authority), EIOPA and ESMA to follow this approach.

A second group of proposals and initiatives is intended to result in increased investment in sustainability. The European Commission is proposing inter alia the following specific measures:

- The introduction of an **EU classification system** for sustainable activities. This EU taxonomy is intended to identify activities that are sustainable from climate change, environmental and socio-political perspectives. The classification system is also to serve as a basis for supporting sustainable solutions through various other measures, such as conformity marks and supervisory board rules.
- The Commission plans to step up its efforts to **curb short-termism within the financial system**. In particular, the European Financial Reporting Advisory Group (EFRAG) is charged with assessing the effects of new IFRS[5] on sustainable investments. The Commission is contemplating drawing on alternative accounting principles in order to ascertain market value and to examine whether mark-to-market valuation promotes short-term thinking within the financial system.
- The Commission also plans to examine whether **capital markets** exert undue short-term pressure on companies and whether high turnover and brief holding periods (e.g. for shares) are practices that put excessive short-term pressure on the real economy.

5 International Financial Reporting Standards.

6 Sustainability as an opportunity for the financial system

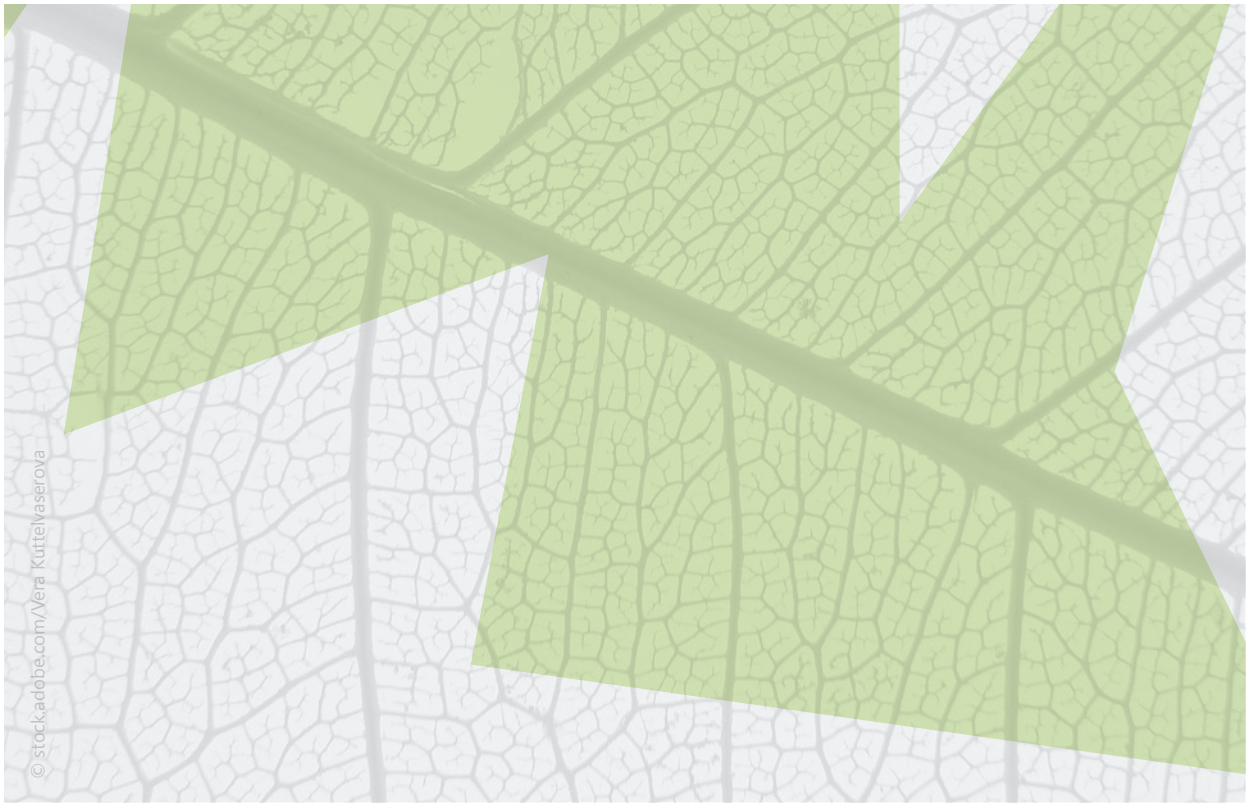
Taking sustainability seriously and putting it into practice offers three opportunities for the financial system.

First, linkage with the real economy will be enhanced. This is because ensuring the economic, ecological and social sustainability of our standard of living is a challenge for the real economy and the real economy has to provide the solutions. The call by former European Central Bank (ECB) President Jean-Claude Trichet in the wake of the financial crisis for the financial system to "serve the real economy"[6] will be met by promoting sustainability considerations. This also recognises and emphasises the social role and significance of the financial system.

Second, attention will be refocused on the long-term perspective. This is because all solutions for sustainability call for a long-term horizon. This is evident in relation to investments in energy, infrastructure and transport, but it also applies to investments in research and technology, education and jobs. Essentially, anything that creates real economic value is long-term in nature.

Third, sustainability enhances the stability of the financial system. Anyone who thinks about long-term risks, who takes into account aspects from outside the financial sector, such as natural resource consumption and social issues, and whose strategy follows a precaution-based approach, ultimately contributes to stabilising the system as a whole. As mentioned above, the US subprime crisis might have turned out differently had there been a greater focus on sustainability.

6 See "The financial sector must not forget that it is to serve the real economy, not the other way around", Jean-Claude Trichet, speech at the European Banking Congress, After the Crisis, Frankfurt am Main, 20 November 2009.



7 Risks and obstacles on the path towards more sustainability in the financial system

However, rooting sustainability in the financial system not only offers opportunities but also entails risks Three main risks should be considered.

First, the embedding of sustainability could further complexity the already extremely detailed and complex European regulatory framework. By global standards, the European financial sector is already the most highly regulated financial system. This is apparent in terms of both the sheer volume of applicable regulations and their detail.

This high regulatory density may partly be due to the architecture of the EU itself because, in the end, more than 25 different national systems have to be governed by this framework. Since each national system features its own characteristics, the various components, operations and processes must first of all be defined at EU level. Thereafter, they must somehow be standardised. The ultimate goal is to create a uniform market across these national systems and ensure a consistent impact in the interest of consumer protection. All of this entails a significant volume of regulation.

However, the introduction of even more complex regulation for sustainability reasons would not only impair the smooth operation of the financial system, but could even potentially do more harm than good. Indeed, the various sustainability initiatives in the past have not been driven by regulation, and it may well be the case that they could not have been achieved on the same scale if they had been regulated. The European Commission is aware of this issue.

The second risk lies in the possibility that new regulations might simply be "tacked on" to existing regulations rather than the existing regulations being appropriatley amended. While amending regulations is still part of the plan, this has always proved to be the more difficult option. If one is to increase support for sustainability within the banking and insurance sector, limited adjustments should also be made to Basel III, Solvency II and IFRS with a view to promoting a long-term approach. In particular the IFRS, with the requirement that equity values in the real economy must be reported in the balance sheet at current and highly fluctuating prices (IFRS 9), give rise to

significant balance sheet volatility, thus dampening sustainable investment.

The third risk is that some individual issues might attract attention, while other important topics are potentially disregarded (even the proverbial elephant in the room). If the goal is to reconfigure the financial system as a whole in line with sustainability considerations, it does not make sense to tackle individual areas. The major issue here is short-termism, which is essentially fuelled by the capital markets. Here we refer not to investment or trading in short-term papers, but rather to short-term trading in long-term papers or securities that generate a yield over the longer term, such as shares and bonds. The problem of short-termism is that various actors on the financial market use – or one might say abuse – long-term instruments in order to earn short-term profits.

But what do we mean by short-term and long-term? Something is long-term where it reflects real or fundamental economic results in a given financial instrument. For equities, these materialise after at least a year, possibly even several years. While the definition of short-term may be somewhat blurred, there is probably consensus that large-scale trading in equities over a horizon of days, weeks or months amounts to short-term action. In the US, the "short-swing profit rule" therefore applies to supervisory boards; this rule imposes a particular tax disadvantage on the selling of equities within six months.[7] This is based on the idea that transactions under which shares are held for fewer than six months are short-term in nature. Official Commission statistics show the scale of the problem of short-term equities trading in the EU. Equities are held for eight months on average. If one remembers that many investors hold on to equities for many years, this average figure gives an impression of the size of the short-term market.

The following question therefore arises: can a financial system be considered sustainable where high-frequency trading in equities occurs every day on such a large scale?[8] Is it acceptable for assets worth billions and entire corporations with thousands of employees to be traded back and forth within a fraction of a second, or for hedge funds to speculate in shares over periods of days or months? The supposed liquidity that such trading entails is not a compelling argument, as this liquidity is the first to evaporate in the event of instability or a crisis, and even leads – in situations involving a "flash crash" – to systemic instability. In addition, the gains made from high frequency trading correspond to losses for long-term investors.

The personnel and financial resources dedicated to short-term finance may result in a private benefit, but they are not beneficial to society as a whole. A thriving financial system does not need them. Thus, any spanner thrown into the works of short-term trading – whether through a low transaction tax or a kind of short-swing profit rule – can only be good news for sustainability.

7 The short-swing profit rule is a rule imposed by the Securities and Exchange Commission (SEC) that prohibits company insiders from making profits from the purchase and sale of shares if they are held for fewer than six months. It is interesting that six months is defined as short term. Some investors, including in particular hedge funds and so-called activist investors, often attempt to procure inside information through direct contact with companies, even if they are not insiders per se.

8 High frequency trading (HFT) must not be confused with electronic trading. Although high frequency trading is necessarily electronic, it represents a special type of electronic trading, with assets being held for fractions of a second. There is naturally no economic return over such a short period of time; this type of trading is pure technology where computer programs trade with other computer programs, which ultimately front run purchases and sales by "real" investors, thus skimming off profits from large transaction volumes (e.g. through quote stuffing and flash orders). The German legislation enacted in 2013 attempted to take account of this practice, while however maintaining its basic structure. A simple way of preventing this highly risky, unstable and non-transparent practice of high frequency trading would be a requirement that an order cannot be removed from the system within the space of a few minutes. It remains to be seen whether politicians will be able to bring themselves to adopt such a simple yet effective measure.

8 Three principles for successfully achieving a sustainable financial system

How can the opportunities and risks be reconciled with one another? A solution is proposed here, based on three principles.

First, as already stressed, sustainability must always be conceptualised with reference to environment, society and the economy. In other words, it is not enough simply to ensure ecological sustainability, or even to only slow down climate change; this must also be achieved in parallel with social and economic sustainability. The one-sided focusing of economic or financial and political systems on ecology to the detriment of social or economic sustainability cannot represent a viable solution for a social market economy such as Germany.

A good example in this regard is the current status of the German energy transition. While it has been possible to raise the share of electricity generated from renewable energy to more than 30%, the construction of 27,000 wind turbines and the implementation of large-scale overhead power line projects has entailed serious environmental damage through deforestation and the depletion of species diversity. Also, it must not be forgotten that electricity prices have doubled, thus affecting both private and business customers. This is in addition to the large financial losses resulting from sudden write-downs to functioning systems. Due to the rapid shift, local producers of the technology have not been able to establish themselves domestically; as a result, solar panels in particular come almost exclusively from China – which has knock-on effects for jobs in Europe and the environment in China. In addition, as is known, CO_2 emissions have barely fallen: it has not been possible to reduce the burning of coal and gas on the same scale, as these sources of energy have had to make up for the phasing out of nuclear power. Overall, the energy transition has proved to be a very mixed bag: despite subsidies of around 250 billion euros, not much sustainability has been achieved in terms of the economy, the environment and emissions.

Overall, the next few years will show whether or not pan-EU and German climate targets, seeking to achieve a massive decline in CO_2 emissions within the space of a few years, have amounted to a mistake (in negotiations). Or just they would constitute a negotiating mistake if they proved to be unachievable in terms of environmental, social and economic sustainability, whereas the relevant goals of negotiating partners are entirely achievable.

It must not be forgotten that climate targets specific to individual countries or to the EU are not grounded in science, but are rather purely the results of negotiation.

In Paris, the EU agreed to cut emissions to around 30% below current levels;[9] China by contrast secured permission to continue to increase emissions until 2030, without being subject to any maximum limit; scientists expect the world's largest emitter to produce between 10% and 20% more emissions by then, which would then put emissions around 380% higher than they were in 1990. Moreover, the US agreed in Paris to lower emissions to around 10% below the 1990 mark, and that was before Donald Trump decided to withdraw from the Paris Agreement.[10] This shows how differently the global target was divided up over the various regions. Massive investment in the research and development of new technologies will be key if these targets are to be achieved without further environmental and economic damage.It is here that the financial system will come into play to foster relevant investment. However, this will require perseverance and cannot be achieved under short-term pressure from the capital markets.

9 The precise negotiating result from the EU was formulated as a 40% cut in CO_2 emissions by 2030 below 1990 levels, which represents a cut of around 30% compared to current levels.

10 The various commitments in Paris were formulated in different ways; some countries embraced targets for the year 2025 or for 2030, while others took 1990 or 2014 levels as their baseline. The information provided in the text is based on estimates, which are used in order to render the amounts roughly comparable.

The second principle is that there must be clarity about the overarching goal of all efforts. It is understandable to control current risks; however, this cannot be the dominant (let alone the only) way of approaching the issue of sustainability in finance. The core issue, as the challenge of CO_2 targets shows, is how to mobilise the financial system in order to achieve significantly higher long-term investment.

When engaging with the issue of sustainability, regulators and supervisory bodies may be tempted to focus on the current financial structure in order to identify any existing sustainability and climate risks.

This is apparent from the example of AXA, which announced to divest from coal , and thus sent out a global signal calling for a climate-conscious investment policy within the insurance sector. The investments affected, which amounted to 500 million euros, made up 0.1% of the assets managed by AXA.[11] Even if this had resulted in any losses, it would not have had any implications for financial stability as the investments had been backed up with sufficient capital and were continuously monitored.

Ideally, there should be dialogue concerning sustainability issues between supervisory bodies and business undertakings. However, this is not the real issue. In fact, the introduction of complicated climate stress tests could run the risk of breaking the proverbial nut with a hammer.

Rather, the key question is how long-term investments are to be promoted. Mobilising investment is in the first instance a matter for regulators, and naturally for economic policy. This should specifically allow for diversity, as there is currently great technological room for manoeuvre in relation to a wide range of sustainability issues. It is by no means evident, for instance, that electrical vehicles will establish themselves as the dominant solution.[12] It is also possible that fuel cells or synthetic, zero-emission gases may be used, for example.

11 See the announcement by the then CEO Henri de Castries, "Climate Change: It's No Longer About Whether, It's About When", 22 May 2015, https://group.axa.com/en/newsroom/news/about-whether-about-when, retrieved on 16 April 2019.

12 The battery of an electrically powered passenger car weighs between 300 and 800 kilogrammes. Of this amount, around five kilogrammes are pure lithium. The conversion of all passenger cars worldwide would require around 5 million tonnes of lithium. However, lithium mining is associated with enormous environmental damage and destruction; around two million litres of water are required in order to mine every tonne of lithium. This represents an enormous problem for deposits in places that are water-scarce and takes valuable drinking water away from the surrounding area.

The global shipping industry alone emits more than a billion tonnes of CO_2.

Thirdly, considerable restraint should be exercised in adopting additional regulations, given that the EU financial system is one of the most heavily regulated in the world. This is because costs increase for financial actors exponentially, rather than in a linear manner, with each additional regulation, as all rules interact with one another.

It is thus important to appreciate that the European Commission's action plan is not based solely on regulations, but rather on a whole variety of other measures, including voluntary initiatives as well. This is because sustainability is ultimately a core interest for all banks with long-term assets and long-term liabilities. Many initiatives taken by companies, such as the divestment from coal by AXA mentioned above, are based solely on business considerations and not on regulations. Companies have a clear view of all opportunities and risks, and they are free to decide how to react appropriately to them in line with their own business models.

In addition, reflection upon new regulations should always involve a critical examination of existing ones. This means specifically that existing regulations should be examined in order to establish whether they are sufficiently conducive to long-term investment, or whether they impair it. Consideration should be given to the considerable complexity within regulations and their focus on a rather short-term horizon. For instance, the horizon of most regulations, such as Basel III and Solvency II, is one year – far shorter than a sustainability horizon. Moreover, IFRS 9 does not consider sustainability at all. It is also necessary to take account of the short-term pressure on companies from capital markets. Many investors have a much shorter horizon than a company's managers. Most analysts base their company recommendations on a timeframe of between one and three years – this too is much shorter than the sustainability horizon. Putting sustainability in the hands of investors is therefore probably not the best idea.

9 Concluding remarks

The issue of sustainability is so interesting because it is actually self-evident. Humans as forward-looking beings, civil society as a structure promoting stability, and the interests of the economy itself: all of these are essentially directed at sustainability. Two of the most interesting questions are therefore why sustainability has had to be re-invented as an issue within the modern economy, and what possible obstacles could stand in the way of a natural focus on sustainability. This article has considered a few areas, in particular short-term trading in long-term financial instruments. As long as this is allowed in its current form, the financial system will never be sustainable. This means that, here too, there can be no "business as usual".

The issue of sustainability is also so topical due to the focus in recent times on how to better manage globalisation. Presumably, neither German diesel engines nor the country's remaining coal-fired power stations are the real "climate killers", especially as China ,to take only one example, burns 15 times more coal and is planning hundreds of new coal-fired power stations. It seems that the real "climate killer" is globalisation itself, specifically due to the depletion of natural resources and internationalised production chains with their unfathomable volumes of globally transported semi-finished and finished goods. The global shipping industry, which shifts all of these goods around the globe, emits more than a billion tonnes of CO_2 on its own. Unfortunately however, this is not apparent when the goods turn up on the shelves of electronics retailers, supermarkets, hardware stores and clothes shops.

Therefore, anyone who thinks through the issue of sustainability will eventually have to ask how globalisation can be better managed so as to retain its enormous benefits, while at the same time reducing the disadvantages for the local economy, the welfare state and the environment. The guiding principles here should be "local production", "regional employment", "transition from industrial to biological agriculture", and many more.

The illusory efficiency of global markets and prices, which end up masking natural resource depletion, should be subjected to critical scrutiny. Increased investment in the local production of goods of all types will not only be good for the climate, but will also bring economic and social benefits. The new catchword could be "think globally and invest locally". Here, too, there are major opportunities for the financial system, for investment and for financial stability. It will be an exciting journey.

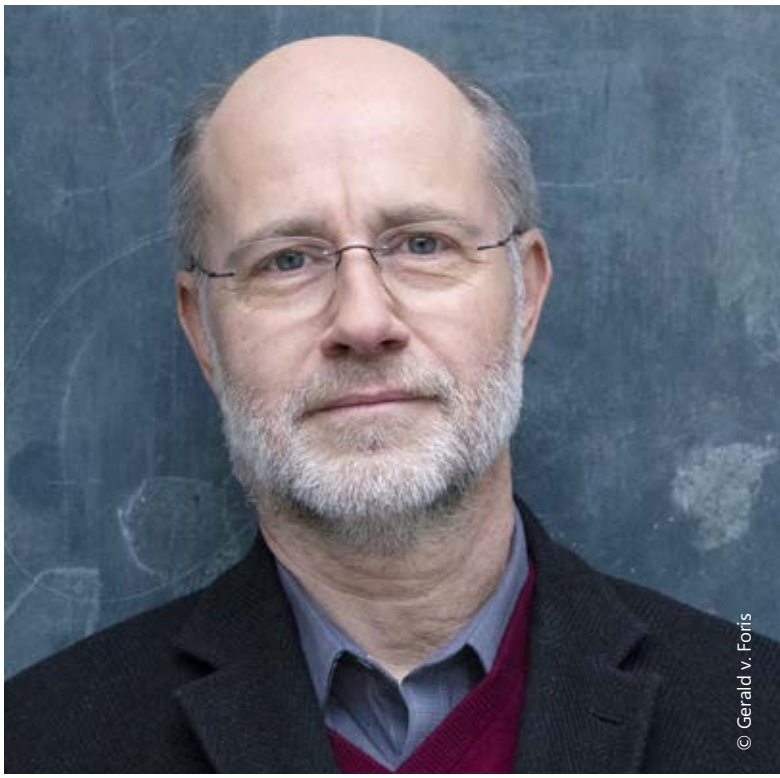
VI

The financial sector will play an important role in the transformation towards an ecological, sustainable and decarbonised society.

“We have yet to get started – and we need to do it now.”

Interview with

Professor Dr Harald Lesch
Physicist, astronomer and natural philosopher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Professor Lesch, “Climate change – five minutes past midnight?” is the title of your presentation at BaFin’s “Sustainable Finance” event on 9 May 2019. Is there nothing left to do but wait for the end of the world? Or is there still something to save from a scientific point of view?
Something can still be done, but we do not have much time left. In 2018, CO_2 emissions increased to 33.1 gigatonnes, setting a new negative record.[1] In other words, we have yet to get started – and we need to do it now.

In your opinion, what are the three biggest threats to Earth and humanity and what can we do to address these threats?
Climate change, climate change and climate change. If we are really serious about doing something about it, we need to be determined to take every step necessary to ensure the decarbonisation of our daily lives as quickly as possible. This cannot be limited to individual consumer behaviour – rather, we need to act resolutely as a community and change the way we live. One measure that is mentioned time and again is a carbon tax.[2] Some argue that introducing such a tax would bring disadvantages for our economy. But then again, someone has to start somewhere, and Sweden, the United Kingdom and other countries have already done it. Of course, Germany is just a small player in this area, but if we, as a large industrialised country, were to introduce such a tax, we could show others that industry and a carbon tax are not necessarily at odds with one another. This, too, could prompt other countries to follow suit relatively quickly. I also think that common standards within the European Union would be a good idea as well.

1 See the International Energy Agency, https://www.iea.org/newsroom/news/2019/march/global-energy-demand-rose-by-23-in-2018-its-fastest-pace-in-the-last-decade.html, retrieved on 27 March 2019.

2 CO_2 tax.

You once made a remark to the effect that the Anglo-Saxon way of doing business is set to fail within the next few decades. You have also said that only the European system can work in the long run. What exactly do you mean by this? Are you making the case for a social market economy?
Yes, for a much more cooperative social market economy. The concentration of wealth, which is obviously the result of an economy focused exclusively on competition, deprives us of the means to make investments that are indispensable to society. What do the rich have to gain from their money? They aren't spending it anymore, and their ravenous appetite to invest in financial products is destroying our future. This is why we need a more cooperative mindset, and I mean that in an idealistic sense. And the wealthy should give up their salaries as a symbolic gesture. DAX[3] managers are so rich anyway that they could work for a euro a year.

What role can or should the financial sector play?
The financial sector will play an extremely important role in the transformation towards an ecological, sustainable and decarbonised society. The expansion of renewable energies, including network and storage capacity, requires a great deal of money, and this needs to be invested now – not sometime soon! We should therefore invest in ethical and environmentally friendly projects and move away from coal, oil and too much mobility. I'm sorry to say this, but this is the only way forward.

If the financial sector commits to sustainability, financial supervisors not only want to know about the opportunities but also the risks this would entail. What is your view?
It is perfectly obvious that risks are part of the deal. Of course, sustainability investments are not risk-free either, but unfortunately, there is no other world where we can try things out. A business-as-usual approach in operations and risk management is doomed to fail because the risks we face in a world of global warming are completely unpredictable.

Socio-ethical components are also playing an increasingly important role in the debate surrounding the question of how companies are to meet environmental, social and governance (ESG) criteria. If we can establish the link between sustainability and the financial market, should financial supervisors place socio-ethical requirements on supervised institutions and undertakings?
Yes, of course! Immediately! There are plenty of things that financial institutions can do. They can create committees, e.g. an ethics committee that regularly evaluates financial products and business models to ensure that they comply with ESG[4] criteria. For the financial sector, too, the top priority must be to allow for a phase-out of our carbon-intensive economy as quickly as possible. In this way, financial institutions can make a significant contribution to reducing the substantial increase in atmospheric carbon dioxide. If we fail to do this, it is pointless to even talk about any other measures.

3 *Deutscher Aktienindex* (German stock index).

4 ESG stands for environmental, social and governance.


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VII

The financial sector does not exist in a vacuum, separate from society; it is part of society, and should therefore play a role in protecting the environment and the climate.

”The EU can make itself the world’s lead market for sustainable investment.”

Interview with

Sven Giegold
Member of the Green Group in the European Parliament

© Dominik Butzmann

Mr Giegold, in March 2018 the European Commission presented its “action plan on financing sustainable growth”.[1] The Council and the European Parliament are taking different approaches to the issue of sustainability in the financial sector. Why do you think that is?

In the European Parliament, we have, with an eye towards the completion of the Capital Markets Union, successfully advocated a pan-European approach to sustainable financial markets. With good standards, the EU[2] can make itself the world’s lead market for sustainable investment. The Council, meanwhile, has overall advocated for weaker, less binding rules than the Parliament. For the Council, the emphasis has unfortunately often been on protecting national interests and those of old industry, such as fossil fuels and nuclear energy. The EU has to fulfil its obligations under the Paris Agreement and involve the financial sector in the collective protection of the environment and the climate. We have therefore campaigned in Parliament for legislation to link sustainable finance with the Paris Agreement. This includes extending the definition of sustainability risks so that it covers not just financial risks but also actual risks to humankind and the environment.

Why would the European Parliament like management board members’ actions with regard to sustainability to be a factor in the calculation of their remuneration?

It would be better for our economy if the variable remuneration received by management board members were more dependent on the long-term success of

1 European Commission, Action Plan: Financing Sustainable Growth, COM (2018) 97, dated 8 March 2018, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN, retrieved on 14 April 2019.
2 European Union.

the company. Short-term profit maximisation as a measure for the success of a company, meanwhile, has proved harmful. Sustainability, for instance preventing environmental damage, or avoiding the high costs that would be associated with violations of the law, has a significant effect on the future success or failure of a company. However, this can lead to inconsistencies when harmful business actions are lucrative in the short term and the risk takers themselves are no longer there to feel the effects of the future consequences. The incentives for good corporate governance should therefore overall be brought in line with sustainability and pressing issues for society such as climate protection.

Isn't saving the environment primarily a job for society?

The financial sector does not exist in a vacuum, separate from society; it is part of society, and should therefore play a role in protecting the environment and the climate. A sustainable financial system can serve as a framework to create incentives and strengthen market signals to channel capital into green investments. It is of key importance that sustainability risks are transparent so that investors are better able to assess the real risks of their investments and can adapt their investment strategies at an early stage. A green financial sector, however, is not an alternative to investments in a green economy and definitive environmental legislation. Quite the reverse, in fact: financial markets can only finance investments that are economically viable. If rapid ecological transformation leads to an overall increase in investments, this is beneficial for the financial sector. That is why we are looking for partners in the financial industry – in order to implement a consistent climate policy, for example.

How does the European Parliament intend to incentivise the private sector to invest in helping to save the environment? What do you believe is the role of financial regulation in this context? Specifically: would you argue in favour of privileges for "green finance" in financial regulation, regardless of the riskiness of the investments?

There is already a demand for sustainable investments. What we are missing are unambiguous definitions and transparency about investments in order to effectively combat "greenwashing". The EU classification system (the taxonomy) and the new disclosure rules are therefore of key importance for green finance. The taxonomy is the most important building block for the sustainable finance initiative, because it provides clarity for all stakeholders on what is meant by a sustainable investment. In our view, the taxonomy should not only define areas that are green and sustainable but also those that are "brown" and damaging to the climate or the environment. Clear disclosure rules for investment strategies and financial products improve transparency and therefore trust in green financial markets. The stability of the financial markets can be improved by small and large investors recognising and taking into account the environmental risks of their investments at an early stage.

It is also important that customer advice in the future includes questions regarding sustainability preferences as standard. This is the only way that investors can make informed decisions about their investments, taking into account their preferences regarding the consequences of their investments for humankind and the environment. The two green benchmarks that have recently been agreed are another important success for sustainable finance and against greenwashing, because they require the companies involved to document the measures they take to protect the climate.

In addition to the initiatives that have been implemented so far, the Green group[3] is pressing for the introduction of an EU standard for green bonds and an EU label for green financial products, comparable to the EU Ecolabel, to promote sustainable finance. This would lead to pressure from end customers, too, to establish a sustainable financial system.

We do not support capital relief for sustainable investments made by banks and insurance undertakings. Capital requirements for green investments must only be reduced if it can actually be proven that they are lower risk. But as a rule, innovative technologies and

3 Greens/EFA-group in the European Parliament.

investments are not lower risk. BaFin[4] will need to act soon and take environmental, social and governance (ESG) risks into account in the SREP[5]. Banks that disregard ESG risks or violate human rights have a higher level of risk and should be required to hold more capital.

At the moment, the focus for ESG criteria is still on the "E" for "environment", covering topics such as pollution, greenhouse gas emissions and energy efficiency. What are your thoughts on S and G[6]?
The environmental taxonomy that has been agreed so far contains minimum standards for social factors, and we succeeded to strengthen these considerably compared to the proposals made by the Commission. Companies that claim to be sustainable will therefore also need to comply with the UN's[7] international human rights framework. In order that the social factors can be taken into account even better in the future, here too a classification system is needed in the medium term that sets out common terms and standards. The priority here, alongside human rights, is respect for workers' rights. The Commission, in its planned proposal for a social classification system, should build on the European Pillar of Social Rights. For the classification system for governance, particularly important factors would include a functioning compliance department, the avoidance of money laundering risks and internal and external communication channels for whistleblowers.

Mr Giegold, thank you for the interview!

4 Federal Financial Supervisory Authority *(Bundesanstalt für Finanzdienstleistungsaufsicht)*.
5 SREP is the abbreviation for the Supervisory Review and Evaluation Process.
6 S stands for "social", and G for "governance".
7 United Nations.

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