CHALLENGES OF MANAGEMENT OF GREEN FINANCE AFTER THE PANDEMIC

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Abstract: *Transitioning to a sustainable future with inclusive, green economies and resilient ecosystems requires huge investments. The rescue packages imposed by the COVID-19 crisis make the pursuit of global sustainability goals even more dependent on urgent investment decisions to be taken by the public and private sector. In response, this study is an attempt to understand the role of green financing in economic growth after the pandemic. The article also examines the impact of COVID-19 on the financial industry, the participation of green finance in the economic recovery after the pandemic. The author put forward the provision on the existence of causal relationships between the "green" financial and "green" economy and analyzed the challenges of management of green finance in Bulgaria.*

Key words: *Green finance, challenges, management, after COVID – 19, Bulgaria*

JEL: G32, M2, N20, O1

1. Introduction

Coronavirus disease was declared a pandemic in early March 2020 by the World Health Organization, despite the fact the outbreak began in mid-2019 in central China. In just a few months, the pandemic managed to affect the development of the world economy leaving no country aside. First of all, changes in the trends of managing the mechanisms of world economic development are associated with the introduction of strict quarantine measures, which were introduced by the governments of many countries. As a result, many shopping and entertainment centers were closed, all public events were banned and the population operated in conditions of restricted movement both within the country and traveling abroad. As for the economy, almost every industry experienced a reduction in production volumes due to the introduction of limits on the simultaneous stay of workers in one room.

The analysis of publications in journals included in the SCOPUS database (2021) shows that as of 2021, about 132,110 studies on coronavirus have been conducted worldwide. This is one of the most popular topics covered by almost any research on the development of economics, medicine, science, culture and other areas. When it comes to the studies of the impact of coronavirus on various sectors of the economy all around the globe, there are about 6,710 publications in SCOPUS database now (Petrunenko et al., 2021, p. 77).

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The global pandemic will have a long-term effect on human attitudes towards the environment and on the financing of this area. As uncertainties grow about protecting populations from disease and preventing climate change, it is important to build resilience to both COVID-19 and long-term environmental challenges. This can be done by focusing on green finance - increasing its efficiency and strengthening its position in post-pandemic economic recovery. In the last decade, green finance has become not only an important area of countering environmental threats and climate change but also a condition for sustainable development. They represent an attractive foundation for creating resource-efficient, less carbon, less harmful to the environment, more socially oriented, and inclusive communities. In modern conditions, environmental safety is becoming a decisive factor in sustainable development (Klioutchnikov and Kliuchnikov, 2021).

Much of the economic literature on the optimal financial response to climate change has focused on the trade-off between direct costs and the potentially uncertain long-term benefits of investments to reduce carbon emissions. At the same time, the discount rate and its parameters play a central role in this discussion, since even small changes in discount rates can dramatically change the current value of investments in long horizons (Klioutchnikov and Kliuchnikov, 2021). Thus, in the long term, make investments in reducing carbon emissions attractive or not attractive. In this regard, finance was considered from the standpoint of solving two problems: (I) climate change in the right direction, (II) adaptation of the production and household system to climate change. The impact of financial innovation on climate change is being actively studied/Policymakers and academics are just beginning to examine the scope and impact of COVID-19's impact on the financial industry and its involvement in post-pandemic economic recovery. However, the link between climate change and the current pandemic in light of the development of green finance is a new topic.

Promoting responsible or sustainable investments in the aftermath of the pandemic requires a progressive rather than defensive financial system. Key will be to embrace the best examples of responsible behaviour, circularity, and solidarity that emerged during the health crisis. In turn, this demands a profound rethinking of financial instruments, practices, metrics and tools in use prior to the crisis, which were evidently failing in their ability to mobilize sufficient public and private capital to accomplish the sustainability transition and convince stakeholders of progress made (Quatrini, 2021).

With the aim of achieving the Sustainable Development Goals by 2030, policymakers, governments, and researchers are continuously seeking a solution that can provide ecological balance along with economic development. According to the International Finance Corporation, green finance is a financial innovation that will provide economic growth and environmental benefits. Green finance is attracting the attention of many countries (Singh and Mishra, 2022) define green finance as a fiscal model that combines economic development and environmental protection.

2. Methodology

The methodology used is based on general scientific methods of scientific knowledge - analysis, synthesis, induction and deduction, as well as on specific methods, specifically applying the

systematic approach, the historical approach, the method of comparison and the abstract-logical method. The information base of this study is the results of large studies of international professional organizations on development on management of green finance.

3. The global finance economy after pandemic

Along with the study of the dynamics of epidemics, research was conducted on the negative effects of the COVID-19 pandemic on the world economy and possible changes in trends and methods of business management and economic development strategies. Many countries attempt to revise history and trying to build a strategy for the development of the state that will prevent similar catastrophes. An attempt was made to predict the transformation of the world and Europe. In particular, after the end of the pandemic, those sectors of the economy that are based on low-skilled labor and old technologies will be significantly weakened. The pandemic severely affects such sectors of the economy as tourism, logistics and transport, the restaurant and hotel business, the leisure industry and a large number of industrial sectors other than agriculture. However, every challenge and difficulty leads to new opportunities. Thus, as a result of the pandemic, some markets have been allowed to develop. These are the markets for communications, health care, ecological production and construction, ecological energy, the economics of psychological comfort (Petrunenko et al., 2021, p. 77).

As the world enters the third year of the COVID- 19 crisis, economic developments have been both encouraging and troubling, clouded by many risks and considerable uncertainty. The good news is that output in many countries rebounded in 2021 after a sharp decline in 2020. Advanced economies and many middle-income countries have reached substantial vaccination rates. International trade has picked up, and high prices are benefiting many developing countries. Domestic financial crises and foreign debt restructurings have been less frequent than might have been expected in a time of severe global shocks (World Bank, 2022).

After rebounding to an estimated 5.5 percent in 2021, global growth is expected to decelerate markedly to 4.1 percent in 2022, reflecting continued COVID-19 flare-ups, diminished fiscal support, and lingering supply bottlenecks. The near-term outlook for global growth is somewhat weaker, and for global inflation notably higher, than previously envisioned, owing to pandemic resurgence, higher food and energy prices, and more pernicious supply disruptions. Global growth is projected to soften further to 3.2 percent in 2023, as pent-up demand wanes and supportive macroeconomic policies continue to be un-wound. Although output and investment in advanced economies are projected to return to pre-pandemic trends next year, in emerging market and developing economies (EMDEs)— particularly in small states and fragile and conflict -afflicted countries—they will remain markedly below, owing to lower vaccination rates, tighter fiscal and monetary policies, and more persistent scarring from the pandemic (World Bank, 2022).

As some developed economies start recovering, central banks and national governments are weighing the impact and timing of tapering off monetary and fiscal support as a result of concerns over potential inflationary pressures against the prospect of slowing the pace of the recovery. These concerns are compounded by the emergence of new disease variants and

rolling pandemic hotspots that challenge national efforts to contain infections and fully restore economic activities. Major advanced economies, comprising 60% of global economic activity, are projected to operate below their potential output level through at least 2024, which indicates lower national and individual economic welfare relative to pre-pandemic levels. According to the October 2021 World Economic Outlook prepared by the International Monetary Fund (IMF), global economic growth fell to an annualized rate of around -3.2% in 2020, with a recovery of 5.9% projected for 2021 and 4.9% for 2022.The IMF also concluded that advanced economies would face continued economic challenges into 2022 as a result of supply shortages and that prospects for low-income developing economies "had darkened considerably" due to the disparities in access to vaccines and differences in economic policy support (Jackson et al., 2021).

A raging pandemic—unleashed by a highly contagious COVID-19 virus—has triggered unprecedented restrictions not only on the movement of people but also on a range of economic activities, and the declaration of national emergencies in most countries in Europe and North America. Growing demand for urgent healthcare and rising death tolls are straining national healthcare systems. The pandemic is disrupting global supply chains and international trade. Since the COVID-19 threat first emerged, economists have debated whether the shock to the global economy will be _temporary' or _permanent'. In the more optimistic _temporary shock' view, the virus will eventually pass, and economic life can then largely go back to normal. Massive fiscal and monetary expansion programs in Western countries will keep the economy afloat in the interim — with government balance sheets socialising the costs of economic hibernation. Government debt will be much higher in the aftermath. But incredibly low borrowing costs will keep this sustainable. The three important Economic impact of COVID-19 could affect the global economy through:

- ✓ Direct impact on production - Production has already been substantially affected by the shutdown in global areas.
- ✓ Supply chain and market disruption - Many manufacturing firms rely on imported intermediate inputs from China and other countries affected by the disease. Many companies also rely on sales in China to meet financial goals.
- ✓ Financial impact on firms and financial markets. Temporary disruptions of inputs and/or production might stress some firms, particularly those with inadequate liquidity. Traders in financial markets may or may not correctly anticipate or understand which firms might be vulnerable (Mishra, 2020).

The COVID-19 pandemic represents an unprecedented disruption to the global economy and world trade, as production and consumption are scaled back across the globe. Urgent and bold policy measures are needed, not only to contain the pandemic and save lives, but also to protect the most vulnerable in our societies from economic ruin and to sustain economic growth and financial stability. Required key policies are:

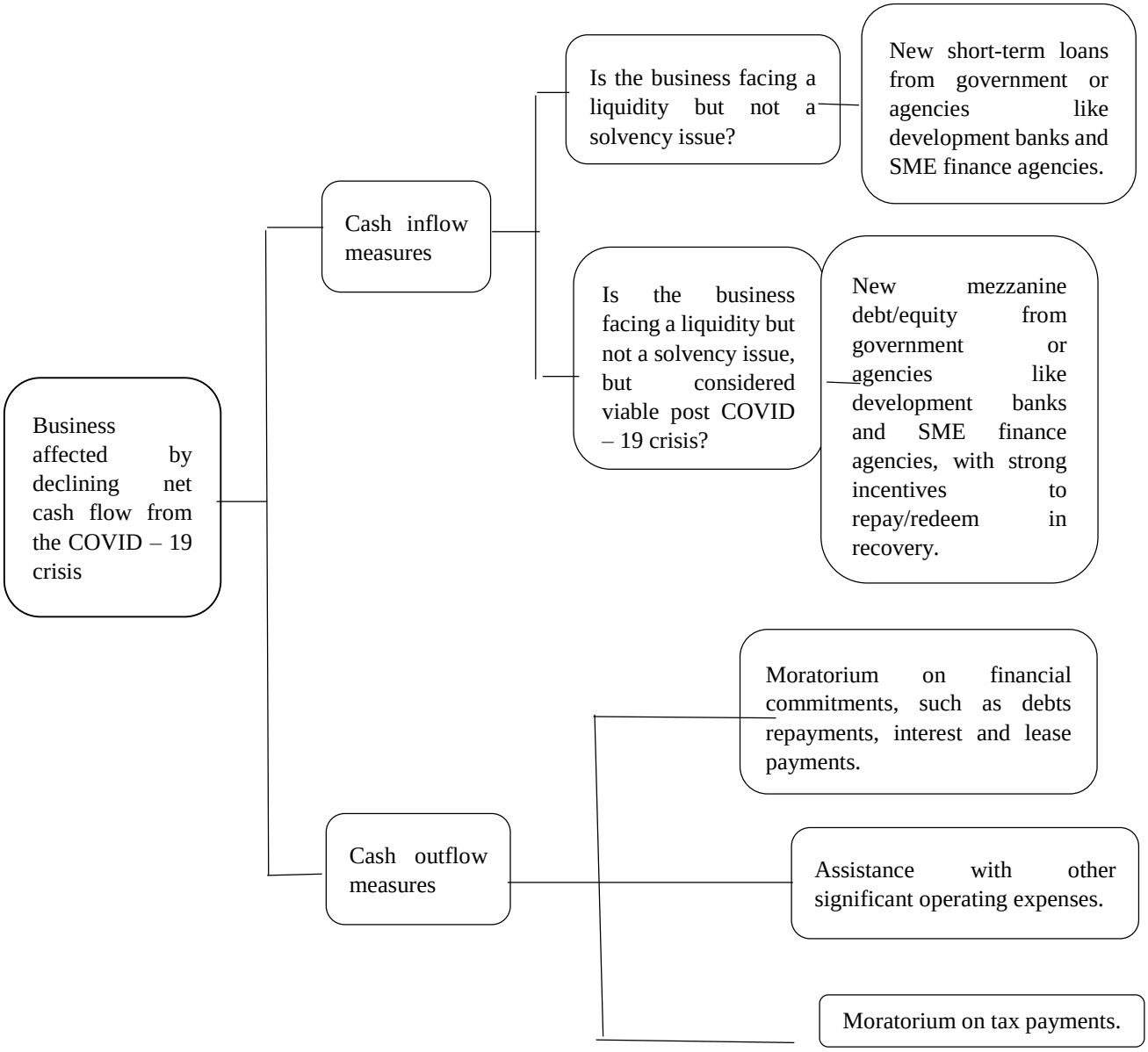
- ✓ Fiscal Issues
- ✓ Macroeconomic and Development Policies
- ✓ Manage Balanced Supply and demand of essential goods and services
- ✓ Supply and demand for foreign currency

- ✓ The role of international organizations
- ✓ Investment Promotion and Facilitation.

The one of the main problems of global finance is related to the management of cash flows after pandemic. Corporate cash flow challenges need tailored global politics (see fig. 1).

Figure 1. Challenges of management of corporate cash flow

Entity	Direction of Flow	Challenges and Responses



Source: *OECD Report, 2020*

At the intersection of the COVID-19 pandemic and the global economy, numerous issues pose challenges to scholars and policy makers. The de-globalization phenomenon coupled with trade slowdown has been an issue even before the pandemic broke out. There are several outstanding issues in international trade such as disruptions of global value chains, the multilateral trading system in crisis and WTO reform, the US-China trade war, and accelerating digital transformation of the world economy (rapid development and growth of digital technology and digital trade) among others. In international macroeconomics and finance, some of the important issues that are interconnected with the current pandemic and need to be addressed include the global financial crisis and its aftermath, crisis management, capital flow management, exchange rates, and financial globalization.

Trade and financial globalization have marched hand-in-hand continuously for several decades before the global financial crisis. However, the de-globalization of international trade was initiated by the global financial crisis, and it continued with a series of events such as Brexit and the US-China trade war that came after the global financial crisis. International trade has fallen sharply under COVID-19, and many people predict that de-globalization of international trade is likely to continue even after COVID-19 ends (Deardorff et al., 2020).

Near-term global growth prospects face major down-side risks, amid a lingering pandemic. With new waves of infections spreading quickly, the human and economic tolls are expected to increase. The key measures are:

- ✓ The world has emerged from the depths of a paralyzing economic crisis, but recovery remains fragile amid the lingering pandemic, persistent labour market challenges, ongoing supply-chain disruptions and rising inflation.
- ✓ The pandemic has threatened hard-won achievements towards the 2030 Agenda for Sustainable Development, significantly undermining progress on global poverty reduction.
- ✓ Governments around the world are facing difficult policy choices, which require better targeted and coordinated monetary, fiscal and labour market policies.

4. Green finance and global finance economy

The transition to a green economy is necessary. First of all, for the world to avoid catastrophic climate change. The International Energy Agency (IEA) estimates that additional investment in renewable energy and energy efficiency alone between 2015 and 2040 was the US $ 26 trillion. Overall, reaching the global targets in 2030 may require mobilising green finance of $ 90 trillion. Under the influence of the pandemic, many problems in the economy and finance have worsened significantly. Some of these problems are temporary and will resolve quickly after the end of the pandemic, while others are long-term, but new ones have also

emerged. Big data finance analysts have observed that epidemiological methods of studying disease incidence and prevalence are well-suited for assessing financial risk and for building models that can analyse green inclusions in finance and economics. It turned out that, despite the differences in the subject area, there are general approaches for the analysis and predictive modelling of green finance and mass diseases and anti-epidemiological measures, as well as the risks associated with them. In addition, a significant part of the data used for analysis is common for these purposes. Modern epidemiological models of the spread of infection, as well as the stages of a pandemic and its exit from it, can affect the development of business and the market (its structure and even scale) and, thereby, direct investments in the appropriate direction. Another use of data for green investment decisions will be information on industry rebounds and recovery rates, as the impact of COVID-19 on different industries varies significantly (Klioutchnikov and Kliuchnikov, 2021).

In simple terms, COVID-19 showed all importance of sustainable finance for the health and well-being of people and the planet. Where economic recovery is urgently needed, green finance can be a long-term solution especially in regions like the Middle East, Africa, Asia and Latin America. Strategies to restore green finances should consider raising funds from global investors. The global green bond market is growing rapidly, with investors increasingly focusing on green bonds as a long-term investment strategy. Sustainability will be a driving force in green finance in the coming decades (Streimikiene and Kaftan, 2021). According to a recent World Bank report, sustainable fixed assets will reach $30.7 trillion by 2030. As financial institutions fight climate change on a global scale, they are being tempted to participate (World Bank (1), 2020).

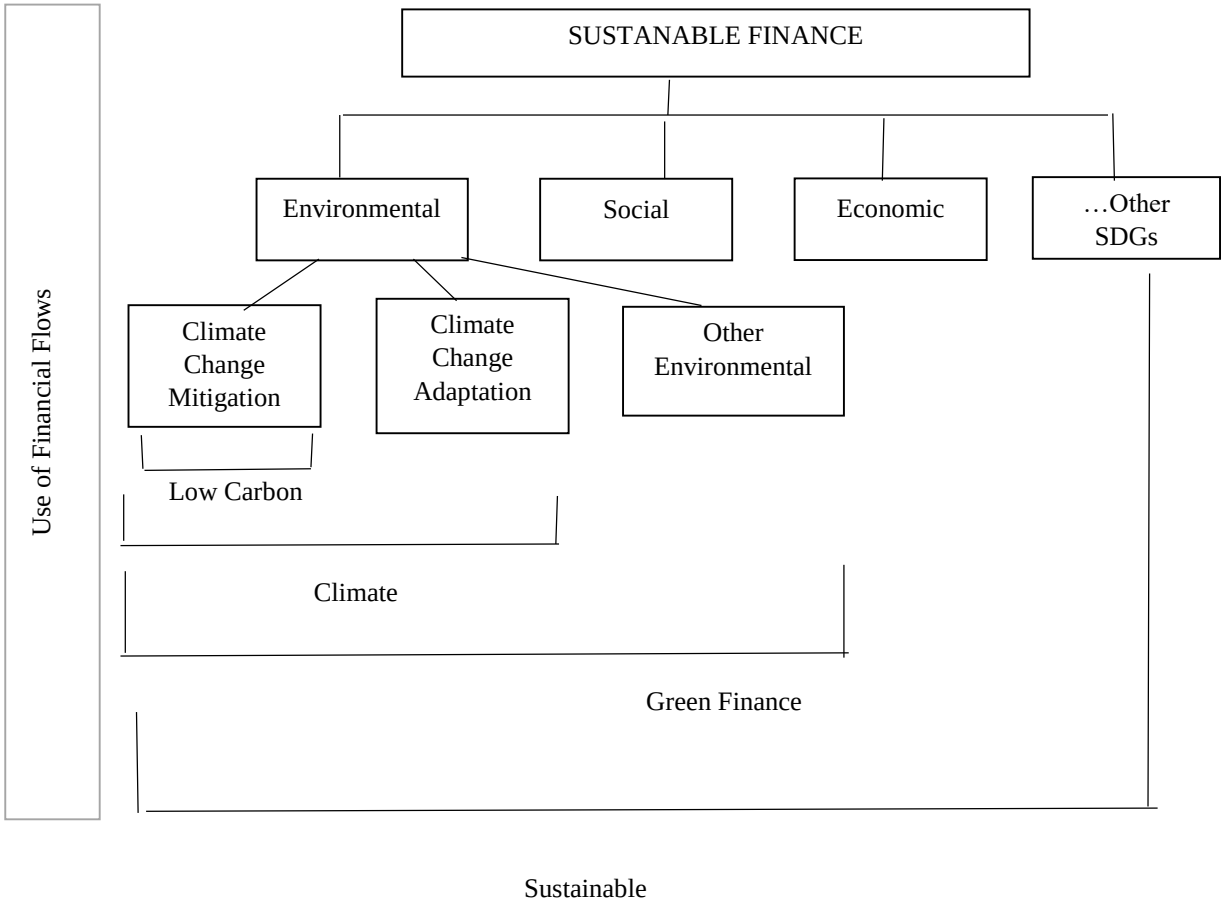
The pandemic primarily affected banks. The sudden decline in interest rates and customer behaviour as a result of market volatility required rapid analysis to support decisions such as revising lending strategies and deposit pricing. The effectiveness of these strategies directly affects the bank's ability to mitigate margin pressure in near-zero conditions. Measurements and instruments in many banks are not dynamic enough to meet adequate information needs. As a result, all the necessary data can be obtained. Buffer levels are eliminated, but not necessarily consistent. It appears that local governments, for example, will issue municipal bonds to finance green solutions at the local level. The following main directions of the impact of climate risks on the financial business can be distinguished: (1) since the risk increases and its probabilistic assessments change, changes are expected in insurance, banking and stocks; (2) linear impacts are replaced by non-linear ones - socio-economic consequences propagate in a predominantly non-linear manner; (3) more and more hazards reach threshold values, beyond which physiological, anthropogenic or ecological systems are affected, then there is a danger for the operation of the entire financial system - the prospect of its failure; (4) temporary impacts, for example, associated with the postponement of the payback periods of investment projects and the increase in temporary asymmetries between expectations and actual restructuring; (5) geographical - climatic impacts can be both local and global in nature on the economy and require appropriate financial decisions; (6) systemic impacts - the direct impact of climate change on agriculture is local in nature, it can have indirect consequences for regions and sectors through

interconnected socio-economic and financial systems; (7) the poorest communities and population groups are generally the most financially vulnerable to climate impacts (Klioutchnikov and Kliuchnikov, 2021).

To catalyse a decisive green transition, targeted government stimulus spending must be backed up by accelerated measures to build markets that can deliver for people and the planet. In the context of the COVID-19 recovery, this means delivering a green agenda that creates green jobs and markets and galvanises progress to ensure we leave no one behind. Central banks and supervisors are already playing a big role in providing emergency support to economies. Many are also acting to take account of climate-related risks and green finance. The mechanisms used by central banks to support stability and stimulate recovery can be calibrated to account for climate and sustainability concerns and objectives. These include aligning of asset purchases and refinancing operations with Paris Agreement goals, adjusting prudential measures to avoid transition risk building up on the balance sheets of financial institutions, and adopting sustainable investment practices for portfolio management (PRI Report, 2020).

Enhancing green and climate finance availability at the regional, national, and local levels will help countries recover more swiftly from the pandemic and grow in a more resilient and sustainable manner. Although green and climate finance is often associated with the financial provisions to support compliance with commitments to the Kyoto Protocol and the Paris Agreement, it is a far broader concept that includes financing sourced and leveraged through international, domestic, public, and private channels and utilizes numerous government and market instruments taddress environmental and climate challenges (United Nations publication, 2021). Green finance is an even broader term which encompasses both climate finance for mitigation and adaptation and finance for a wider range of environmental objectives, including industrial resource efficiency and pollution control, water sanitation, or biodiversity protection. Together, green and climate finance combine a wide range of instruments, mechanisms and policies that fund and support projects that deliver environmental benefits and promote a low carbon economy (see Fig. 2).

Figure 2 – Use of Financial Flows



Source: *United Nations publication, 2021*

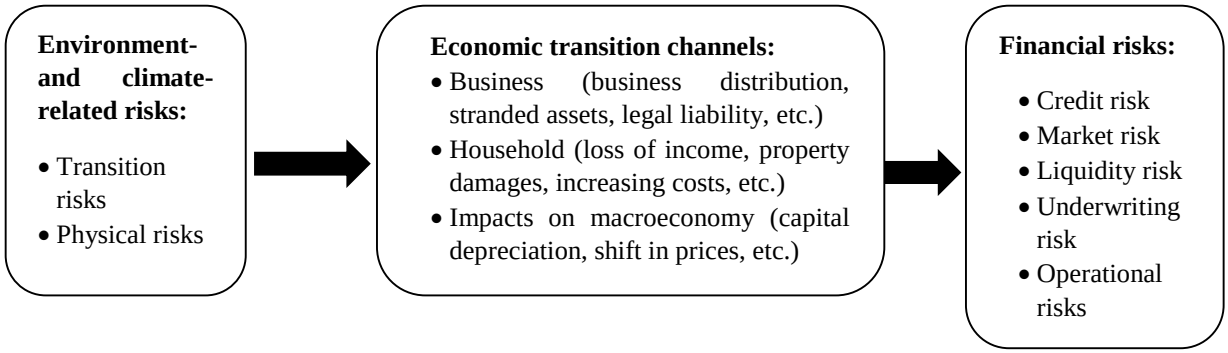
The OECD estimates that €6.35 trillion a year will be required globally to meet Paris Agreement goals by 2030, while the European Commission estimates that in the climate and energy areas alone an additional annual investment of €240 billion is needed to meet the EU's climate and energy targets by 20301. The financial system can contribute to addressing these needs through climate finance, green finance and sustainable finance. Climate finance provides funds for addressing climate change adaptation and mitigation, green finance has a broader scope as it also covers other environmental goals (e.g. biodiversity protection/restoration), while sustainable finance extends its domain to environmental, social and governance factors (ESG). Therefore, green finance should be seen as a subset of sustainable finance; or alternatively sustainable finance can be considered as an evolution of green finance (Spinaci, 2021).

Greening finance and green financing are driving the green transformation of the financial system. Greening finance aims to mainstream climate and environmental factors into the financial system and to improve the identification and management of financial risks related to the climate and the environment. Green financing aims to mobilise private capital flows

in green investments. These drivers are also the backbone of sustainable finance. Moreover, the inclusion of ESG factors in the investment decision-making process allows to consider a broader area of investment and to strengthen financial stability by considering further risks than just the environmental one.

'Greening finance' is short for 'greening the financial system', and corresponds to the diffusion of new tools, procedures and regulations aimed at inducing the financial system to take due account of climate and environmental considerations in financial risk management and, consequently, in investment decision-making. The financial system is increasingly treating climate- and environment-related risks as financial risks, not just as reputational ones. There is more awareness that these risks can become financially material, due to the working of some economic transmission channels (see Fig. 3) (Spinaci, 2021).

Figure 3 – Transmission channels from environmental risks to financial risks



Source: Prepared by author on the base Spinaci, 2021

The financial stability may be undermined by the increasing financial risks linked to climate change and identified three major risks: (1) Physical risks are strictly linked to the physical effects of climate change; (2) Transition risks are linked to the transition to a less polluting, greener economy, which may lead to changes in the value of a wide range of assets; (3) Liability risks are strictly linked to the consequences of the above two risks. Since financial risks have an effect on financial stability, policymakers, financial regulators, and supervisory authorities are working in parallel to promote the integration of climate- and environment-related risks into financial decision-making processes and financial risks management. Market and regulatory trends indicate that there is an increased interest in green and sustainable finance among investors and policymakers. However, despite the rapid uptake of green and sustainable finance on the financial markets and the increased political focus

they enjoy, their growth needs to be accelerated in order to achieve the targets indicated by the Paris Agreement and the 2030 UN Agenda for Sustainable Development.

While market-fixing approaches address information barriers for financiers, the market-shaping approach has gradually emerged over the past 30 years to address both demand and supply barriers to climate finance. It aims to tackle several risks that deter entrepreneurs and financiers from exposing their resources:

1. Political and regulatory risks arising from governmental actions, including changes in policies or regulations that adversely impact infrastructure investments;
2. Macroeconomic and business risks arising from the possibility that the industry and/or the economic environment are subject to change; and
3. Technical risks determined by the skills of operators and managers, and related to the features of the project (e.g. its complexity, construction and technology).

A direct consequence of these risks is the limited supply of high-quality, transparent, low-carbon and climate-resilient investment projects despite the unmet demand for new infrastructures (Hourcade et al., 2021).

The financial sector plays a crucial role in the transition to a more sustainable future, but it is not the only sector that plays a role. The influence of financial institutions as financial services providers means not only that they control their own impact on companies, but also that they do more than any other industry to integrate global business and investment. Sustainable finance generally refers to a more proactive approach to investment decisions, which leads to increased long-term investment in renewable energy, energy efficiency and sustainability. More specifically, it can refer to environmental aspects, but also to the environmental and human health effects of financial transactions. The Green Finance strategy aims to establish a common understanding of "greening", clarify the role of finance as a key component of the greening of our economy and establish a common framework for the development of a sustainable financial system. It is also important that the sector can demonstrate its social objectives. More recently, many financial institutions and companies have been more concerned about the need to meet the net emissions target of zero carbon emissions by 2050. This includes internalizing external environmental factors and adapting risk perception to encourage environmentally friendly investments and reduce polluting ones. For example, it is important that we behave responsibly in our decisions on how to reduce energy consumption and restrict business travel. Promoting large-scale, economically viable green finance helps to prioritise green investment over – as usual – business investment that supports unsustainable growth patterns (Streimikiene and Kaftan, 2021).

Central banks and financial supervisors could be a key player in developing climate finance instruments that can help reduce systemic risk and stranded assets. Other arguments in favour of an expanded role for central banks and financial supervisors in climate finance include the need to develop a long-term national strategy. Given that climate change is becoming a major threat to the global economy, central bank supervisors should be asked to

analyse its effects and intervene to fulfil their duties as public institutions. If their responsibilities include restricting certain types of lending, they should limit financial flows to carbon-intensive and polluting borrowers, in order to mitigate credit market failures.

The economic and financial impacts of Covid-19 have exacerbated the four challenges developing countries were already facing to scale up climate action. These countries will need to ensure that climate action and economic recovery are mutually supportive, scale up investment without increasing the debt burden, attract large scale private financial flows in a context of perceived higher investment risk, and secure access to long-term affordable finance at a time of rising capital costs. These challenges can be addressed through four sets of complementary actions.

1. Integrating policies on climate action, sustainable development, and Covid-19 stimulus to minimise incremental investment requirements and optimise development co-benefits.
2. Alleviating the debt burden of developing countries to create fiscal space to finance their green, climate-resilient recovery plans.
3. Leveraging sovereign and multi-country guarantee funds to reduce investment risk and catalyse private finance.
4. Increasing developing countries' access to the green bond market.

The four strategic interventions could enable developing countries to address the additional economic and financial challenges created by the pandemic and realise their climate ambitions. Together, these four interventions – support to integrated and costed climate policy and plans, alleviation of debt burden, leverage of sovereign and multi-country guarantee funds and increased access to the green bond market – would enable developing countries to foster a green, climate-resilient recovery from the Covid-19 crisis (Hourcade et al., 2021). Table 1 shows the main types of instruments.

Table 1. Environmental Policies Instruments

Type of Instruments	**Information and empowerment instruments**	**Control and regulatory instruments**	**Economic and market instruments**	**Institutional instruments**	**Financial instruments**
Market Creation Instruments	Rely on knowledge, communication, and persuasion to influence behaviour and supply skilled labour.	Rely on the establishment of obligations, encouraging or prohibiting or restricting certain types of behaviour.	Financial incentives and disincentives to influence private sector behaviour and investment decision-making.	Create an institutional and organizational environment to facilitate policy and technology development and deployment.	Direct public sector (co) investment to establish a proof of concept or commercial track record of new solutions.
Demand-side instruments	✓ Information disclosure and green taxonomies (climate risks,	✓ Macro-prudential regulations (climate stress tests for banks and insurers, etc.)	✓ Carbon taxes, phase out of fossil fuel subsidies. ✓ Development of new asset classes.	✓ Green finance regulatory networks, asset managers coalition and central bank	

	carbon liabilities, etc.)		✓ Fossil fuel divestment by public financial institutions.	coordination mechanisms.	
Supply-side instruments	✓ Investment in education and research ✓ Technical and vocational training and retooling	✓ Streamlining licensing processes	✓ Power purchase agreements ✓ R&D commissioning ✓ Property rights agreements	✓ Dedicated financial institutions (green banks, green guarantee companies, green bond platforms, etc.)	✓ Public sector-led R&D ✓ Project concessional finance (grant and loans) ✓ Incubation grants/venture capital ✓ Guarantees ✓ Equity investment

Source: Prepared by author on the base Hourcade et al., 2021

5. Challenges of management of green finance in Bulgaria

According to the The National Development Programme BULGARIA 2030 (Bulgaria 2030, 2022) the main policy objective by 2030 is to accelerate the economic convergence with the EU standard, through targeted and focused government support for increasing specialisation in products and industries characterized by a high technological and research intensity. The implementation of the strategic goals is envisaged through targeted policies and interventions, grouped into five interconnected and integrated development axes: (1) Innovative and Intelligent Bulgaria; (2) Green and Sustainable Bulgaria; (3) Connected and Integrated Bulgaria; (4) Responsive and Just Bulgaria. The introduction of eco-innovation activities, including new eco-products and technologies, will play an important role in supporting businesses. At the same time, efforts will be made to create new jobs in the green and blue economy. Low resource efficiency will also be addressed through actions to reduce the amount of waste generated in the production process, including in the implementation of projects within the framework of public procurement and concessions.

The developed system of co-ordinates characterizing the current socio-political background suggests that (1) political practices led by the idea of sustainable development are possible to launch at the present, that is, the necessary minimal socio-political stability for such initiatives has been already secured (2) as of 2019 it would even be desirable to have policies organized under this global programmatic concept, (3) Bulgaria's specific context requires that special attention be drawn to a number of issues which, otherwise, might become serious obstacles. There is an imperative necessity of adopting and implementing the sustainable development concept.

The analysis of challenges shows that the most important and manageable in a short term are the following main spheres:

1. Clarifying and popularizing the sustainable development concept and providing political and public support for its implementation
2. Long term oriented strategic planning

3. Promoting and assisting partnership and dialogue
4. Improving the information provision, environment impact assessment and monitoring

The activities in these spheres lead to the common objective to establish systems and procedures to include sustainable development in the decision-making process. The main requirements to the institution are that its staff should be competent on the problems of sustainable development, it should have the necessary political prestige in order to be able to overcome the sector approach and institution interests, to serve as an instrument for promoting the dialogue, partnership, mutual information and interaction between the various agents of sustainable development. The most important functions performed by the institution could be:

- ✓ methodological and information assistance of sustainable development activities, various institutions including popularization of sustainable development concept
- ✓ elaboration of a national strategy for sustainable development
- ✓ coordination of national programs and large investment projects (above certain fixed value) from the point of view of their contribution for sustainable development of the country
- ✓ following the policy and development with regard to implementation of sustainable development concept including monitoring and assessment of accomplishing programs and projects for sustainable development by various organizations and on different levels
- ✓ promoting of dialogue, interaction and partnership including through assisting to establish networks
- ✓ interaction with similar institutions abroad (Marinov, 2020).

One of the most important challenges of green finance in Bulgaria is the intensification and the complicated interweaving of global problems that have interdependent social economic, demographic, natural-resource and ecological characteristics, but they refer mostly to the relations between nature and society. It becomes obvious that we cannot afford to use energy, forest, ground, plant and animal sources, regulate the increase of cities and produce industrial production the way we have done it before. The intensification of the global problems or the efforts to solve any of them would lead to considerable changes in quantitative and qualitative characteristics of the whole complex of planetary, regional or local socio-economic problems of social development. Therefore for their solving are necessary not only the united efforts of all states but also a change in contemporary attitudes and models of behavior of governments, business, groups and individuals combined with development of science and implementation of technology. It is also necessary a common methodological base, which will balance the proprieties in development of contemporary civilization. This necessity causes the appearance of the concept for sustainable development that is transformed into a new paradigm of contemporary social development.

The other challenges for sustainable development after the pandemic in Bulgaria are improved or acknowledged commitments, needs, restrictors, resistance, sources of unsustainability and

the risks related to them. They could be summarized in several groups that show both the type and the source of problems, as well as the degree of their overcoming and the possible influences:

- ✓ imperatives
- ✓ conceptual challenges
- ✓ challenges related to the objective conditions and development of the country
- ✓ instrumental
- ✓ behavior (Marinov, 2020).

The behavior challenges are related to the necessity of change in thinking, attitudes and behavior of individuals, groups and institutions directed to sustainability. Although they are easy to overcome at first sight , due to the wide adoption of sustainable development concept the practice so far shows that it is a sphere where exceptional efforts will be necessary and no fast results are to be expected. The risks related to development green finance are the following:

- ✓ sustainable development is difficult to perceive as a whole concept;
- ✓ sustainable development could be rejected easily as a declarative and abstract one, impossible to be implemented, or at least untimely;
- ✓ sustainable development could be used as a modern word, as a spell or even as a cover for ”unsustainable” actions;
- ✓ it is possible to form policies and undertake concrete activities that do not lead to real sustainable development for a long period of time due to ”distortion” in there is a risk of ”copying” (including the help of experts) of ”successful” projects for sustainable development that are not complied with the concrete conditions (national or local)one direction and violation of the idea for a balance set in the concept.

The strategic priorities for management of green finance in Bulgaria are connect with assistance with infrastructure expansion and upgrades, in close cooperation with the EU and others, including private providers. The other is support sustainable infrastructure development through regional connectivity, green municipal solutions, decarbonisation and resource efficiency. This priority can be achieved through (1) improved connectivity and integration of key transport and energy infrastructure with more private sector participation; (2) improved green infrastructure and access to finance at the local and municipal level; (3) decarbonisation and increased energy and resource efficiency; (4) Strengthened financial sector resilience. Achieving improved green infrastructure will be achieved through the implementation of the following activities:

- ✓ Promote sustainable municipal investments using Green and Smart Cities frameworks to address environmental challenges.
- ✓ Helping public service operators (water, wastewater, solid waste, district heating) to improve their services and comply with EU directives via

technical cooperation and funding, including through managing and co-financing EU structural funds to ensure their effective utilisation.

- ✓ Support urban regeneration plans and brownfield redevelopment (including new industrial development zones).
- ✓ Facilitating financing by local commercial banks to public utility companies by providing risk sharing instruments, such as guarantees.

6. Conclusion

The COVID-19 pandemic has become the biggest problem for financial institutions in nearly a century. As the economic impact spreads, financial institutions face some big priorities that require concrete steps to turn things around now as well as calibrate for the future. Finance is designed to tackle the challenges of economic recovery in ways that help not only reduce risks and vulnerabilities to the economy but also reduce the emissions that cause climate change and increase development uncertainty (Klioutchnikov and Kliuchnikov, 2021).

We must take a careful look at market signals across asset classes, recession and recovery patterns, as well as the history of epidemics and shocks, to glean insights into the path ahead. Urgent and bold policy measures are needed, not only to contain the pandemic and save lives, but also to protect the most vulnerable in our societies from economic ruin and to sustain economic growth and financial stability.

The world financial centres were the most affected by the pandemic, which affects the revaluation of green finance. Thus, green finance in academia and green finance in financial markets are very different concepts. In the financial industry, data deployment and collection is becoming key, and the only thing that matters are whether the financial product that real customers want can be delivered in sufficient green packaging and adequate liquidity.

Banking systems in Europe and the United States must play a role in getting the economy back on track after the pandemic by lending to businesses that have suffered. However, how effective their support for economic recovery will be depends on the resilience and health of the banks. The loss of risk-weighted assets, such as derivative assets, will eat up banks' capital and reduce their liquidity. This vulnerability could have an increasing impact on the supply and financing of the real economy in general. The outcome is likely to increase vulnerability in the non-financial sector, but the necessary government containment measures will lead to a return to a more stable financial system and thus to a stronger economic recovery. Banks were asked to support a government-led programme of providing emergency loans with permanent liquidity through credit facilities (Streimikiene and Kaftanq 2021).

In spite of its negative effects, the COVID-19 crisis is an opportunity for banks in general to make up for the indifference of the past and to prove that they are responding more than ever to the needs of their customers. In a way, COVID-19 crisis is an opportunity for financial intermediaries to change and improve their long-term position. It is time for them to review their strategies and incorporate structural, social and environmental

approaches, and to stand up for the interests of their customers, their employees and their communities.

Further research is needed to mobilise the necessary resources, bridge obvious knowledge gaps and make progress in addressing questions on how to close the green finance gap. Adapting to clean energy sources and reducing overall energy consumption are therefore crucial to mitigating climate change and achieving the goals of the Paris climate agreement.

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