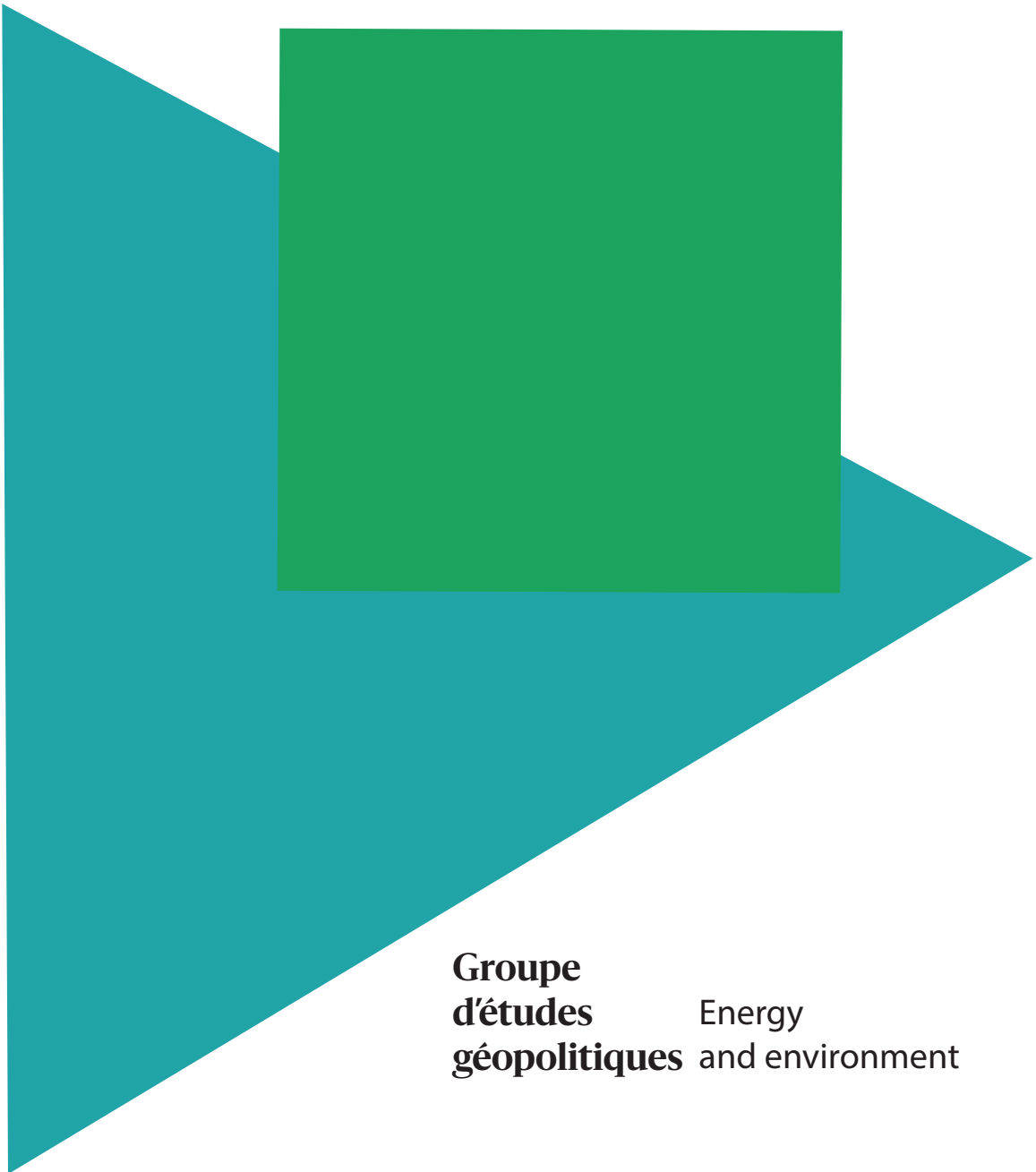


Sustainable and innovative financing tools against epidemics



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Foreword

The Covid-19 pandemic has struck Europe and many other countries hard. As many are beginning to exit from lock-down, the human and economic costs are becoming apparent. Countries like France are facing unprecedented public deficits in excess of 10 percent of GDP, and most economies are expected to enter into a depression. Governments and central banks are now focusing on how to reflate their economies to sustain a recovery.

The recovery from Covid-19 will require large volumes of public and private finance, but it must also address social and environmental vulnerabilities. In particular, countries need to accelerate the shift towards greater equality in our societies, decarbonize their energy systems, accelerate the shift towards a circular economy, and ensure sustainable land-use and food systems.

This working paper makes an important contribution towards understanding how countries can finance a green and just recovery from Covid-19. Just like the pandemic has been unsparing in highlighting weaknesses and vulnerabilities in our public health systems, this working paper shines a spotlight on the challenges that must be overcome to make our financial system fit for purpose in a post-Covid world. In particular, the working paper helps us understand how sustainable finance instruments can support the response to Covid-19, including by (i) supporting public health measures against the pandemic, (ii) responding to the economic crisis, and (iii) building resilience against future waves.

It is critical to link sustainable finance with the broader challenge of meeting the world's shared Sustainable Development Goals (SDGs), which map out ambitious targets to be achieved by 2030. On the one hand the SDGs help identify and quantify investment priorities for sustainable finance. On the other, we need to develop and scale up dedicated financing tools to enable the broad transformations required to achieve the SDGs. In particular, the challenges of zero-carbon energy systems, circular economy, and sustainable land-use and food systems stand out.

The European Union plays a central role in developing the next generation of sustainable finance tools. Its financial sector is well attuned to the need for sustainable finance instruments, and the European Green Deal provides the operational framework for achieving the SDGs and the objectives of the Paris Agreement. Europe is also the greatest provider of international development assistance, which – in conjunction with private finance – can support Green Deals in other countries.

Executive Summary

The COVID-19 pandemic highlighted the urgency of strengthening our societies' resilience, underscoring the risks of the relationship between human activity and its environment. The health crisis has disrupted both real and market economy, fragilizing millions of people, especially the most vulnerable — in April 2020, the IMF counted 190 million unemployed and anticipated a 3% contraction of GDP over the year (IMF, 2020). Companies were forced to adopt a survival mode that has shaken societies, questioning the role of public authorities and the place given to social and ecological issues.

Benefiting from a surge of interest from citizens, regulators and a growing number of market players, sustainable financing is an appropriate tool to respond to the various stages of the crisis: supporting massive efforts in terms of access to healthcare and health equipment and keeping the economy afloat; supporting an exit strategy from the crisis; preventing a new epidemic from breaking out; and getting prepared to a new threat in a renewed framework. As the aspiration for a societal paradigm shift is growing, could sustainable finance become the norm?

4

This working paper provides a critical overview of the instruments of innovative and sustainable finance implemented in response to the COVID-19 crisis, and questions their relevance and prospects.

- The magnitude and severity of the COVID-19 epidemic is reflected in the scale of its health, social & economic impact, and in the scope of the responses. Various non-traditional funding mechanisms exist to respond to and prevent epidemics.
- Among the range of available impact financing instruments, social bonds are experiencing a certain dynamism with a series of issues dedicated to fighting the pandemic's socio-economic effects. This trend also reflects an effort in financial innovation at the service of social and sustainable objectives.
- Massive, and sometimes heterodox interventions and the multiplication of pledges by various actors for a new awareness underline an aspiration towards a paradigm shift. A significant effort led by the European Union is underway to integrate climate requirements into the crisis exit plan. The short, medium and long-term consequences of the pandemic crisis vary between countries, justifying differentiated treatments. The crisis is exacerbating interconnections and the need to deploy common and supportive responses.
- The rhetoric remains to be aligned with reality because capital allocated to projects that comply with environmental, social and good governance (ESG) criteria remains marginal. Institutions such as the ECB and the IMF have only belatedly adopted a stance that is more inclined to integrate climate risk.
- Financial markets could move towards a more widespread adoption of green and ESG-type products. During the crisis, the performance of some financial products incorporating these criteria, as well as that of companies with high ratings in these areas, provides a strong incentive. This resilience signals a better adaptation to risk, which is essential in times of extreme volatility.



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Sustainable and innovative financing tools against epidemics

Finance is known for its creativity in inventing tools able to anticipate and leverage risk. Numerous financing products have thus emerged to raise capital for development aid and environmental preservation (Warner 2013; Costello, Gaines, and Gerber 2012). Details of the financing responses to the coronavirus crisis reveal trends and mechanisms, which vary in terms of conditions, risks and returns. Similar to other forms of economic and financial instruments at the service of laudable purposes in principle, there is a need to highlight the conceptual and ethical limits of some of these tools. In response to the health crisis, innovative financing instruments provide emergency support to cure and, in the longer term, to anticipate and prevent the emergence of new diseases.

The first pandemic bond was created in 2003 by the insurer Swiss Re¹, and the World Bank replicated its operating mode in July 2017 by with the Pandemic Emergency Financing Facility (PEF)². This mechanism, which is related to so-called “catastrophe” bonds, is based on an insurance-type system. For its holders, this product offers the possibility of obtaining a better yield than other debt securities and of diversifying its portfolio with a correlation to real events, natural or health disasters – and not to the market. However, the current crisis underlines the extent to which a health crisis can disrupt economic and financial markets.

This instrument is a bond, which is a debt security giving investors the right to the payment of an annual return, called a coupon, and to the repayment at ma-

turity. For the pandemic facility, the World Bank raised \$320 million from private investors, more than 2.0 oversubscribed. These security holders are remunerated by a coupon paid in part by donor payers (Japan, Australia and Germany). The release of funds to help countries affected by a disaster, in this case a pandemic, is conditional on specific criteria being met. Consequently, some or all of the capital initially paid in by investors to purchase the bonds is used to finance health support; the EFP collects the funds and redistributes them to the countries affected by the crisis. Until such an event is declared according to pre-established parameters, security holders continue to be remunerated.

This facility is based on the model of blended finance, a combination of private and public funding, encouraged by the Addis Ababa Agenda in 2015 on financing for development outcomes. It also exemplifies a growing trend to replace conventional funding for disaster relief with private capital (Ralph 2019), shifting risk to market players (Popper 2015). However, many criticisms exist (Case Study). The parameterization makes activation extremely complicated and ethically questionable, with activation times far too long to meet the urgency of any epidemic. There is a time lag between the goal and the means.

Case Study — Pandemic Emergency Financing Facility by the World Bank

The World Bank’s 2017 bond consists of two tranches, covering different levels of risk and types of disease – Influenza and Coronavirus (Tranche A, totaling \$225 million) and other types of disease, including Ebola and Coronavirus (Tranche B), 95 million) – and whose activation conditions differ according to the infection, the number of affected countries (countries covered by the International Development Association, IDA)³ and the number of deaths recorded by the World Health Organization (World Bank 2018).

The EFP covers six viruses: new orthomyxoviruses (new pandemic influenza A viruses), coronaviridae (SARS, MERS, Covid-19)⁴, Filoviridae (Ebola, Marburg) and other zoonotic diseases (Crimean-Congo haemorrhagic fever, Rift Valley fever, Lassa fever).

Tranche A is released in full – for a total amount of \$275 million for influenza and \$195.83 million for coronavirus - when drastic conditions are met: at least 5,000 cases or deaths have been recorded worldwide over a period of 42 days, and according to a growth rate defined in a fairly complex manner. In this case, investors lose 16.5%

1. <https://www.artemis.bm/deal-directory/vita-capital-ltd/>

2. Since 2003, a further 27 pandemic bonds have been issued. To date, none of them have been triggered.

3. Countries that are affected by the epidemic and are also eligible for funding from the International Development Association, which is part of the World Bank Group: <http://ida.worldbank.org/about/borrowing-countries>

4. At the time of the creation of the EFP, the Covid-19 was not known. Belonging to the family Coronaviridae included by the facility, it is de facto covered.

of their stake (i.e. 37.5 million dollars).

Activation of Tranche B is done in sequence according to the number of confirmed deaths and the geographical distribution of the epidemic. The maximum payment to affected countries is capped at USD 150 million for filovirus, USD 195.83 million for coronavirus and USD 75 million for other diseases covered (Lassa and Rift Valley Fevers and Crimean Congo Hemorrhagic Fever).

In the case of coronavirus, assuming that the other conditions for the spread of the pandemic have been met, the payment ranges from \$56.25 million in the case of a regional epidemic (two to seven countries) once the limit of 250 deaths is crossed, to \$195 million once the threshold of 250 deaths is reached – whether the epidemic is regional or a pandemic (eight or more countries). The reduction of the tranche for investors follows this sequencing⁵.

Tranche B is released first through its graduated mechanism if an epidemic occurs in the countries covered by the facility. It is also much riskier for investors, as they may lose their entire initial contribution (\$95 million). Tranche B is therefore better remunerated than Tranche A with a rate of 11.5% plus Libor and 6.9% plus Libor, respectively.

One of the criteria, the growth rate of the epidemic, is problematic. Apart from the case of influenza, it is calculated according to the number of cases per country. Given the generally poor health conditions in the countries covered by the facility, the capacity to detect and report incidents is uncertain. In addition, the threshold may be too high to allow for any payment. In 2018, during the second-largest Ebola outbreak, which claimed more than 2,000 victims, no compensation was paid because the epidemic was concentrated almost exclusively in the Democratic Republic of Congo – the minimum disbursement of the first tranche required a threshold of 250 deaths in the country of origin and 20 deaths in a second country (Jonas 2019). Finally, this instrument poses a major ethical challenge. Linking the financial activation of humanitarian support to a number of deaths is troubling (Ackerman and Heinzerling 2004). To follow the questioning undertaken by Michael Sandel (Sandel 2012), is there not something abnormal and immoral in monetizing everything? What are the moral limits of markets? The strangely morbid dimension of EFP is thus depicted by author Graham Burnett in an analysis of catastrophe bonds: “the long, turgid and highly confidential specifications that make up the prospectuses of these investments represent a special and entirely ignored subgenre of science fiction... the worst-

case scenarios described in the appendices of catastrophe bond issues go hand in hand with carefully estimated levels of remuneration and price, and are suitable for the consideration of an imaginative portfolio manager seeking to diversify his investments” (Burnett 2015).

The efficiency of the mechanism in responding to health crises is also in question. In addition to the number of deaths and the number of affected countries, the release of funds can only take place after a period of 12 weeks following the WHO’s observed onset of the epidemic. Once this period has elapsed, two additional criteria are used as a condition for disbursement: the rate of growth of the outbreak and the ratio of confirmed cases to the total number of cases. This combination of requirements makes disbursement not only drastic but, above all, dangerously late. The speed of response is a critical issue in responding to health crises. Therefore, is this instrument really appropriate? Moreover, the disbursement is distributed among the affected countries covered by the facility. For the current crisis, the maximum release of 195.83 million dollars would be divided among all the countries eligible for the facility, i.e. 75 countries. This distribution would then be reduced to a mere pittance at the national level, making it impossible to provide significant support.

While the stated aim of the EFP is to “support efforts to respond to the emergence of very serious infectious diseases before they become a pandemic” (World Bank Group 2017), its conditions for activation seem to run counter to this intention, which would instead imply that the EFP be disbursed before reaching the pandemic stage. This instrument remains one tool among others in the World Bank’s arc to help poor countries affected by a pandemic – for the Coronavirus, the multilateral organisation having launched a \$14 billion financing programme (World Bank 2020).

Many critics see the EFP as failing, mainly benefiting investors. For the latter, even if they were able to collect \$96 million in interest up to March 2020 - more than half of the funds disbursed by donor countries (Gross 2020) - activating EFP could be a loss that would deter them from starting again.

In the case of the current coronavirus crisis, bondholders could lose up to \$132.25 million⁶, a loss shared between the two types of investors, with a total EFP release of \$195 million⁷. However, the World Bank’s recognition that the conditions for the trigger had been met came very late, on April 17 – despite the dramatic number of victims since the beginning of the global crisis. Until early April 2020, the pandemic’s growth was mainly concentrated in OECD countries, which were not eligible for the

5. Thus, for the case of coronavirus, the class B tranche undergoes a principal reduction of 37.5% in the case of a regional epidemic and 43.75% in the case of a pandemic. At 750 deaths, this amounts to a loss of 75% for the regions and 87.5% for the worldwide. At 2,500 deaths, 100% of the tranche is lost.

6. 100% of \$95 million (Tranche B) and 16.5% of \$225 million (Tranche A).

7. The difference between the maximum aid of \$195.8 million and the maximum investor losses of \$132.5 million is explained by a reinsurance swap included in the facility’s mechanism.

facility. Activation remained suspended despite the fact that the epidemic began in Asia before also hitting Africa. On April 9, 2020, Air Worldwide, the World Bank's external modeling agent, had determined that the criterion of the exponential growth rate of the virus – the last missing criterion for triggering the payout-had not been met in eligible countries, before revising this assessment in a report dated April 17 (but judging that this criterion had been met by March 31). According to some analysts, the rapid spread of the virus in India was undoubtedly the catalyst. As of May 25, the facility had still not been disbursed.

The majority of existing innovative financing mechanisms for health aim to address health needs in developing countries. A number of organizations, such as the Global Fund, the GAVI Alliance and UNITAID, have integrated these mechanisms into their resource mobilization and diversification strategies.

The first bond for vaccines is one of the most innovative financing health mechanisms. It was implemented by the International Finance Facility for Immunization (IFFIm), created in 2006 to support the Global Alliance for Vaccines and Immunization (GAVI), which was launched in 2000 and brings together the World Health Organization (WHO), UNICEF, the World Bank, the Bill & Melinda Gates Foundation, and representatives from industry, government, academia and NGOs. IFFIm receives long-term commitments from eight donor countries that are converted into bond issues in the international financial markets. Since the launch of IFFIm, more than USD 6.5 billion has been raised (IFFIm 2019).

IFFIm's ratings are determined by the sovereign ratings of the United Kingdom and France, its two largest donors, 45% and 34% respectively in 2019 (Fitch Ratings 2019). In 2012, this bond was adversely affected by the euro area crisis. The downgrading of donor countries by rating agencies, such as France, Spain and Italy, also lowered IFFIm's rating (GAVI 2012). As a result, the interest rate on vaccine bonds has risen, thereby increasing the issue price for GAVI.

GAVI is also supported by a second innovative financing mechanism, the Advanced Market Commitment (AMC), which is designed to finance the purchase of new vaccines for research, manufacture and distribution. This mechanism encourages the development of unprofitable vaccines (Le Gargasson and Salomé 2010).

In 2019, Norway proposed a programme housed within GAVI: the Coalition for Epidemic Preparedness Innovation (CEPI), which would be implemented through IFFIm obligations. CEPI's mandate is to develop vaccines against six diseases with epidemic potential – Nipah virus, Lassa fever, disease X, Rift Valley fever, chikungunya and MERS – to make them affordable to low-income countries

affected by these epidemics. In July 2019, IFFIm issued a NOK 600 million bond to support this initiative (GAVI 2019).

In the context of the coronavirus crisis, CEPI is working on the development of eight vaccines. Since the beginning of the pandemic, many countries have subscribed to CEPI, but a need of \$1.8 billion estimated by Bill Gates remains to fund these efforts. Moreover, as the U.S. philanthropist points out, this funding covers only the development of a vaccine, not its production and distribution. Additional financial efforts remain, far in excess of those required for the development phase. The ultimate goal is to ensure a global immunization campaign, accessible to all, by considering this vaccine as a "global public good", the only one capable of guaranteeing herd immunity (Gates 2020).

Three criteria are generally used to assess the impact of these innovative financing mechanisms: additionality, effectiveness and efficiency (Le Gargasson and Salomé 2010). An innovative health financing mechanism is additional if it complements, not replaces, pre-existing sources of financing. The above tools do not create an exit effect from other donor commitments. Moreover, by soliciting the market, these mechanisms compensate for the lack of public funding, an argument notably put forward by supporters of EFP. As discussed above, the effectiveness is questionable for EFP, but seems to be a given for IFFIm and AMC. The latter addresses market failures by making vaccines affordable to populations that would not otherwise have access to them. Finally, efficiency is confirmed in IFFIm, which provides rapid funding through upstream donor commitments. Conversely, the long lead times in the EFP hamper a timely response.

Even before the creation of the Social Bond Principles (SBP), IFFIm's bonds were instrumental in influencing financial markets to develop such a policy framework. Similar to a social bond, IFFIm adheres to the four components of the SBPs: the assessment of the use of funds («proceeds»), the project selection process, fund management and reporting.

In response to the socio-economic crisis, green and social obligations are experiencing a certain dynamism. Their focus on directing resources to specific projects and measuring their impact meets the objectives of many organizations.

The virus has strained all national health systems, weakening the economies of many countries. It has also had a direct and indirect impact on other areas such as education, employment and social protection systems. The use of green and social bonds by states could both help finance the production of equipment to deal with the health crisis (screening kits, fans, masks, hand disinfectants, etc.) and contribute to economic recovery. The-

refore, any funding dedicated to mitigating the effects of Covid-19 and supporting measures to exit the crisis is likely to respect the principles of social bonds. Funding allocated to Covid-19 efforts is necessary not only during the initial phase of the pandemic, but also in the longer term. While states have a major role to play, private sector funding is also critical to fill the remaining gaps. Social obligations could be an essential means of providing such private financing.

Green and sustainable bonds, already issued by six European states before the crisis (DBRS, 2019), can become the main instruments for financing a green recovery programme by promoting infrastructure and services in line with the objective of a decarbonised economy by 2050. In developing and emerging countries, the crisis is exacerbating the deficits in health and social infrastructure that aggravate the severity of the impact of the epidemic. A massive program of social obligations would make it possible to finance projects improving or providing access to water and sanitation services and waste treatment – among other measures. At the juncture of addressing the health and social crisis, governments, supranational organizations and financial institutions, have issued social bonds to address the Covid-19 crisis. Nevertheless, a wide variety of issue formats appear within these bonds. In April 2020, less than 20% of them complied with the Social Bond Principles defined by the International Capital Market Association (ICMA) and labelled «social bonds» (Kini, 2020). To finance efforts against the humanitarian and economic impacts of Covid-19, issuers have resorted to either traditional bonds, “Covid-19 response” bonds or to labelled “social bonds”⁸.

How Covid-19 related bonds fit with the Social Bond Principles?

No legal meaning of “social bonds” currently exists. Their definition is even less clear than that of green bonds, given the efforts undertaken by the European Union with the development of the Taxonomy on Sustainable Finance and its Green Bond Standard.

However, an internationally recognized set of criteria establishing the major characteristics of a so-called “social” bond, as opposed to a conventional bond, is the Social Bond Principles (“SBP”). The Social and Green Bond Principles (GBP) were developed by the International Capital Markets Association (“ICMA”) in 2017. They are regularly updated to enhance the integrity of these markets.

The SBP and GBP define four basic components for recognising a social and a green bond respectively: the assessment of the use of funds (“proceeds”), the project selection process, fund management and reporting. Social bonds must fund projects that “directly address or mitigate a specific social problem and/or achieve specific

positive social outcomes for, but not limited to, one or more target populations”.

In the context of the Covid-19 crisis, ICMA issued specific guidance for issuers of such bonds (ICMA, 2020). Any bond that would meet the basic criteria of a social or sustainable bond and whose funds raised would be allocated to “alleviate Covid-19-related social problems and provide a positive social outcome” can be qualified as a Covid-19 focused social or sustainable bond (“Covid-19 focused Social Bond”). It should be noted that such labelling is not acceptable if part of the funds is used for non-social or non-sustainable projects. ICMA has also introduced a temporary derogation to facilitate emergency emissions: external evaluation by a third party (“second party opinion”) can take place after the emission.

Leveraging their experience of sustainable issuers, many development banks have issued social and sustainable bonds dedicated to supporting communities and businesses affected by the coronavirus crisis. For example, the International Finance Corporation (IFC or “IFC”), the private sector arm of the World Bank, raised a \$1 billion social bond in March 2020 to support communities in low-income countries affected by the coronavirus. In Africa, the African Development Bank (AfDB or AFDB) issued the \$3 billion “Fight Covid-19” social bond, the most massive issue for the organization and the highest social bond ever issued denominated in dollars, and which was mainly purchased by central banks and official institutions (53%). The funds are dedicated to mitigating the socio-economic impact of the crisis on African populations (African Development Bank 2020). In Latin America, the Inter-American Development Bank (IDB) has launched a five-year \$2 billion bond to help Latin American and Caribbean countries contain “the COVID-19 pandemic and strengthen health services” (IADB 2020). The Governments of Guatemala and Ecuador have also issued a social bond to finance their health and social investments (improvement of health centres and food security infrastructure, loans to businesses, medical insurance for students, promotion of preventive medical practices). In Asia, Indonesia issued a «pandemic» bond to support its efforts to prevent and treat the epidemic.

In Europe, we can note the social bond emissions by the Council of Europe Development Bank (CEB), the “social inclusion bond in response to COVID-19” (CEB 2020), and by the European Investment Bank (EIB), the a “sustainable development bond in response to Covid-19”. The latter builds on the EIB’s Sustainability Responsible Bond framework, which was expanded in 2019 to include health projects, and now focuses on areas of financing directly related to the Covid-19 response, based on technical selection criteria aligned with the European Union (EU) Taxonomy on Responsible Finance (EIB 2020). These two issues were very well received by investors with over-

8. The Pandemic Emergency Facility could be added but it is a singular case.

subscriptions of 3.9 and 5.9 times, respectively for the CEB and EIB.

Guatemala has issued a social label bond to finance its health and social investments in the context of the pandemic (improvement of health centres, programs to combat food insecurity, creation of a national development fund, medical insurance for students, promotion of preventive medical practices). According to the bond's prospectus, it would comply with the recommendations of the Social Bond Principles, and meets four sustainable development goals (Republic of Guatemala, 2020)⁹. In West Africa, the regional central bank (the Central Bank of West African States, BCEAO), in coordination with the WAMU-Securities Agency, is supporting States with the issuance of a "Covid-19 social bond" for an estimated total amount of 1.29 billion euros. With a short maturity of three months, these bonds offer bridge financing. The funds can thus be disbursed rapidly to help countries meet their immediate liquidity needs. Ivory Coast inaugurated these issues on the West African Economic and Monetary Union (WAE-MU) government securities market at the end of April (Agence Ecofin, 2020). This issuance program is based on ICMA's principles governing social bond issues (UMOA-Titres, 2020) (Crisp, 2020). On the corporate side, the pharmaceutical giant Pfizer issued a sustainability bond for investing in its manufacturing and development capacities for medicines and vaccines. It is a first-time issuer in the sustainability bond market.

Outside the ICMA framework, organizations and governments have created a dedicated format with bonds called "in response to COVID-19". The Nordic Investment Bank (NIB) has opted for such a bond, following the example of the French Banque Publique d'Investissement and the Italian Cassa Depositi Prestiti, both to support small and medium-sized enterprises. In Latin America, the Inter-American Development Bank (IDB) launched a five-year, \$2 billion bond to help Latin American and Caribbean countries «contain the Covid-19 pandemic and strengthen health services» (IADB, 2020). Paraguay has issued a "Covid-19" bond for a variety of uses, both general and specific to the fight against the pandemic (Casabianca, 2020). The Swedish medical technology company Getinge has issued a Covid-19 financing bond, the funds of which will be used exclusively to finance the production of medical equipment (ventilators, etc.).

In China, the Chinese central bank (People's Bank of China) issued "coronavirus bonds" intended for companies. It allows them to benefit from a reduced interest rate as long as they devote at least 10% of the funds raised to the fight against the pandemic. For example, the glass-maker Fuyao Glass Industry Group raised 600 million yuan (\$86 million), dedicating 10% of the amount to make

windshields for ambulances (Sun 2020). Many airlines took advantage of this opportunity to bail out their liquidity, which had been damaged by the crisis. Shenzhen Airlines and Xiamen Airlines will allocate 78% and more than 60% respectively to debt repayment, earmarking the rest for ticket redemption fees and the transportation of emergency items (Kawase 2020). For the buyers of securities, this mechanism benefits from relaxed procedures. Approval times are shortened, and foreign investors also benefit from a temporary waiver to exceed their bond purchase ceiling on the Chinese market. However, return rates appear insufficient, especially compared to the growing level of borrowers' default risk (Xueqing 2020). Issuing Chinese bonds to fight the pandemic is a way to provide low-cost funds to companies and motivate them to contribute to the fight against the epidemic, in addition to the loans offered under the PBoC program. Nevertheless, like airlines, many companies are using this new financing instrument mainly to pay off old debts. On the government side, this bond represents above all a way to revive the stalled economy, with a massive purchase by national banks. Along with these measures, the Chinese Ministry of Ecology and the Environment announced the suspension of the application of environmental standards by companies (Reuters, 2020).

The last category includes traditional bonds, without any label, but whose funds are intended to fully or partially finance health and economic efforts against Covid-19. These issuers include Indonesia, Austria and Israel, and the Asian Development Bank.

Typology of bond emissions in response to Covid-19

Traditional bonds	Covid-19 bonds	Social or sustainable bonds
- Republic of Indonesia	- Inter-American Development Bank	- African Development Bank
- Republic of Austria	- Nordic Investment Bank	- International Finance Corporation (World Bank Group)
- State of Israel	- Public Investment Bank	- Council of Europe Development Bank
- Asian Development Bank	- Cassa Depositi Prestiti	- European Investment Bank
	- Republic of Paraguay	- Guatemalan Republic
	- Getinge	- Republic of Côte d'Ivoire
	- Chinese Central Bank	- Pfizer

9. However, the prospectus specifies that the share has not been the subject of an external review («Second Party Opinion») and that its «social bond» label has therefore yet to be confirmed.

In volume, 76% of sustainable bond emissions came from multilateral development banks in April 2020, most of them allocated to support Covid-19 relief efforts. Green bonds are expected to decline in 2020, compared to 2019 – which is already seen with a 49% decline between Q4 2019 and Q1 2020 (Moody's, 2020). In the short term, the pandemic is pushing many companies to issue new debt to strengthen their balance sheets, creating a crowding out effect for green bonds. On the other hand, social and sustainable bonds are enjoying some success. According to Morgan Stanley, \$32 billion of “social” and “sustainable” bonds were issued in April 2020, most of them for Covid-19 interventions. For the first time, the issuance volume of these bonds surpassed that of green bonds in a single month (Gross & Temple-West, 2020).

In the medium and long terms, several factors should ensure the growth of sustainable bonds: significant and growing investor demand for products that respect the environment and social issues, the place of climate change in government plans, and the gradual greening of the financial regulatory system. More flexible financial products, such as bonds indexed on sustainable criteria, should develop. Unlike traditional green or social bonds, which can only finance environmental or social projects respectively, indexed bonds can finance general corporate objectives. However, they pay a variable coupon based on the issuer's overall sustainability performance.

Volume of green, social and sustainable bond issuances for April alone, from 2017 to 2020

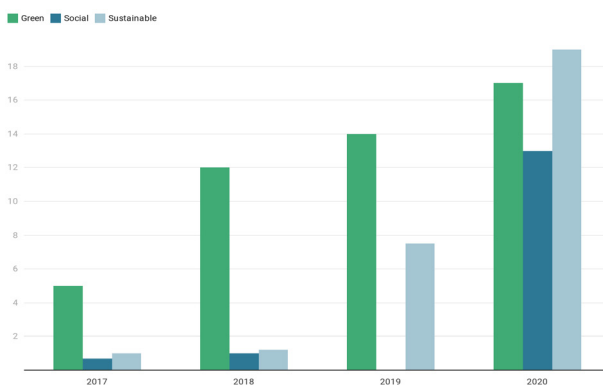


Chart: Groupe d'études géopolitiques, Energy and environment, data source: Refinitiv

The use of these innovative financing tools is also anchored in a renewed discourse on the role of green and sustainable finance. While political actors and civil society are nurturing a growing aspiration for a paradigm shift – a «New economic-ecological rationality,» according to Hubert Védrine – the financial markets could follow suit by standardizing tools that have hitherto been marginal.

Although the financing mechanisms operated by governments and central banks are not part of green and sustainable finance, they all demonstrate massive in-

tervention in the real economy to support major social issues and commit the European Union to accelerating the ecological transition. This note could not overlook a reminder of the measures undertaken, to underline their alignment with the real economy's social priorities.

Speeches and measures taken by many countries in Europe, the United States and Asia, highlight a strengthening of the State, with national nuances. There have been many calls for a pragmatic break with paradigms that self-limit state intervention. The massive support for the economy, with the introduction or the extension of unemployment and social aid schemes – for example, direct support for small businesses in Germany, as part of its massive €1,100 billion plan; the provision of partial unemployment benefits in France; the €3.5 billion allocation to the health sector in Italy; or €600 million to help vulnerable people in Spain - bear witness to an “extraordinary” break. The hitherto marginal idea of universal income is gaining momentum. Many economists and politicians have called for such a measure – for example in the United Kingdom, with a letter from 170 parliamentarians from different parties to the British government (Ian Blackford et al., 2020), or in Spain with the willingness of Pedro Sanchez's government to introduce a universal income that would be sustainable after the crisis (elEconomista.es, 2020).

Differently called but more or less the same, the universal income is already part of the tools used during the crisis in Hong Kong, with the payment of more than 1000 euros to all its permanent residents, and even in the United States, with direct checks of 1,200 dollars. Nevertheless, one wonders what the upheaval posterity created by the pandemic will be on the resources granted to finance social and environmental issues. In an article published in Le Temps, two Swiss researchers call for “anticipating the outcomes of this crisis as an opportunity for new ways of living together” (Morvant-Roux and Servet 2020). They thus support the idea of universal income, by orienting it, thanks to a parameterization favouring short circuits and low-carbon impact activities, towards ecological transition. In the same vein, the economist James K. Boyce, Professor of Development Economics and Environmental Political Economy at the University of Massachusetts, links the carbon tax and universal income (Boyce 2018). In his Small Climate Justice Handbook for Citizens, he proposes putting a price on carbon emissions to raise revenue, limit CO2 emissions, and distribute the money as equal dividends to each citizen. Such a measure would make it possible to act swiftly on the emissions curve while reconciling the demand for social justice and working to reduce inequalities.

The message delivered by Emmanuel Macron in his «Address to the French» on 12 March 2020 calls for “questioning the development model to which our world has

been committed for decades and which reveals its flaws in broad daylight” (Macron 2020). To what extent will the regalian functions of the State be reaffirmed in the service of the social good, with increased funding for health, education and research expenditure? Such a transformation would be accompanied by the increasing use of instruments and devices that standardize the public valuation of common goods.

As far as central banks are concerned, the time has come for an upheaval in the rules hitherto established. If it is not a question of green or sustainable financing, the instruments and policies deployed underline that the criticality of the situation calls for alternative solutions. Thus, the European Central Bank (ECB) announced on March 19 2020, a purchase of public and private securities of 750 billion euros, the Pandemic Emergency Purchase Program (PEPP). Under the derogations provided for under the PEPP, the ECB extended the range of assets eligible for the PEPP to non-financial commercial paper, relaxed its collateral standards and allowed itself to purchase Greek sovereign bonds for the first time since the country’s sovereign debt crisis. The ECB is also looking into the possibility of waiving the limit of purchasing one-third of eligible sovereign bonds from the same country and being flexible in its compliance with the allocation key, to “make its action proportionate to the risks we face” (Lagarde 2020). Admittedly, these measures are taking place in “extraordinary times (which) require extraordinary measures”, ECB President Christine Lagarde said on Twitter. They underline an increased role for public authorities, which, according to many analysts, is likely to last beyond the crisis.

Following the example of the New Deal and the creation of the Reconstruction Finance Corporation by Roosevelt in 1929, the European Union intends to reaffirm its action - and not just its institutionalization of values - in favor of social and ecological objectives. The European Green Deal, announced before the Covid-19 crisis, can not only be a programmatic package of economic and environmental transition, but also a tool to help heal the crisis. The Heads of State and Government of the Union reaffirmed this, by enjoining the Commission to integrate the ecological transition into its crisis exit plan (European Council 2020). Similarly, the call by eleven European Environment Ministers to take environmental and climate issues into account in the post-coronavirus epidemic recovery plans is proof of a willingness to respond with one voice to ESG challenges. Their joint letter stresses that, like the pandemic, the response to climate change requires urgent action. The signatories go back on the green investments foreseen in the Green Deal and warn not to give in “to the temptation of short-term solutions to deal with the current crisis which could lock the EU into a fossil economy for decades to come” (Gewessler et al. 2020).

While the same objective of economic recovery prevails, the means to achieve it differ in terms of environmental impact. There is a risk of a rebound, following the example of the end of the 2008 crisis, with a 5.9% increase in CO2 emissions in 2010, which completely cancelled out the 1.4% drop recorded in 2009 (Peters et al., 2012). To judge the alignment between economic priorities and ecological imperatives, the economist Christian de Perthuis invites us to consider three criteria in government plans: “the choices made in allocating the funds invested; their method of financing; the existence, or not, of relaxation or adjustment of environmental standards implemented before the health crisis” (De Perthuis, 2020)

World CO2 emissions since 1990, in gigatons

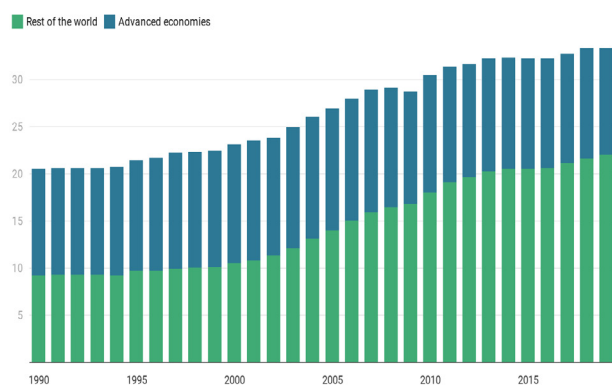


Chart: Groupe d'études géopolitiques, Energy and environment, data source: International Energy Agency

The anecdotal role of ESG-type financial tools, whose legitimacy is often debated with regard to the imperative of financial return, could fundamentally change as a result of the crisis.

The growing attention paid by market players and the regulator to environmental, social and governance (ESG) criteria in recent years should not make us forget the marginal weight of this segment. There is still considerable debate about how central banks and the IMF view climate change. For the ECB, its legitimacy to “address sustainable development issues as part of its monetary policy”, notably through “green” asset purchase programs, is contested. Yet, Christine Lagarde had opened the door to it, making its use conditional on the implementation of the European taxonomy on responsible finance. The results of the strategic review were launched on January 23, 2020 (Lagarde 2019). Opposing voices argue that such a direction would derogate from the ECB’s mandate and market neutrality.

On the IMF side, the debate is less heated. The growing systemic nature of climate risk justifies taking it into account in the institution’s economic and financial surveillance work, whose mandate includes financial and economic stability and the fight against poverty. However, the

IMF has only belatedly embarked on this path. In October 2019, Kristalina Georgieva, the Managing Director of IMF, announced that climate risk would now be considered systematically in IMF missions. In February 2020, the IMF expanded its treatment of this issue, indicating that it would include analysis of physical and transition risks in its climate risk assessment (Adrian, Morsink, and Schumacher 2020).

On the financial markets, the global volume of assets under management invested in sustainable investment reached USD 30.7 trillion in 2018 (GSIA 2018), or 11% of the total global asset market. On the stock markets, total assets under management in sustainable exchange-traded funds (or more commonly ETFs, for “Exchange-Traded Fund”) represent only 1% of all ETFs, and still little capital is oriented towards sustainable funds compared to traditional funds. This trend could be reversed with the announcement in January 2020 by the heavyweight ETF operator, BlackRock of the United States, to double the number of its ESG-ETFs.

Green bonds, the most dynamic financial instruments in green finance, represent only a minimal share of the bond market. At the end of 2018, the outstanding amount of the global green bond market and the outstanding amount of climate-indexed bonds constituted only 0.39% and 1.17%, respectively (CBI 2018) of the US\$102.8 trillion global traditional bond market (Sifma 2019). In emerging economies, the US\$136 billion green bond market accounts for about 0.5% of these countries’ total outstanding bonds in 2019 (IFC and Amundi 2018). In addition, the coronavirus crisis has sharply reduced the market for social, environmental and sustainable bonds (respectively “social”, “green” and “sustainable bonds”)¹⁰ in early 2020. Compared to the same period last year, the facial value of these bonds has decreased by 25%, with a more notable decrease for green emissions (Hurley 2020)¹¹. Based on Moody’s forecasts, sustainable bond issuance will reach \$325 billion this year, down from \$400 billion in 2019.

It remains to be seen how the crisis will affect these types of instruments and, beyond that, all financing and commitments issued before the crisis that integrate environmental concerns.

In the wake of the crisis, markets have been paying close attention to the performance of indices and bonds that incorporate ESG issues. On the stock market, ETFs incorporating ESG criteria are enjoying a strong attraction, with more than \$50 billion since the beginning of 2020, which the crisis has not denied, with a net flow of

\$3.7 billion in March and continuing upward movement in April (IIF 2020). These excellent results contrast with the difficulties of traditional ETFs, which have been affected by a steady outflow since March.

In addition, sustainable equity funds have tended to outperform traditional funds in major markets (Rouland & Takatsuki, 2020). There are several explanations for this: first, ESG funds tend to be less exposed to energy-intensive companies in sectors that have been heavily impacted by the crisis. Conversely, the formers avoid these stocks, being weighted towards low-carbon stocks. Second, a company is eligible to ESG funds based on its ability to provide data on ESG criteria and to have an ambitious sustainable strategy. This generally goes along with better management, favoring better robustness in case of disruptive events. Thirdly, this resilience makes ESG funds a «safe haven» in times of crisis, thus attracting all types of investors. The major social and environmental implications of Covid-19 have underlined the defensive nature of ESG funds. Fourthly, investors, depending on whether they invest separately in traditional markets and ESG markets, may have different strategies: the former, with shorter time horizons and greater liquidity, are more likely to disengage quickly during a crisis, in contrast to ESG investors with longer-term horizons. Finally, the latter may be less sensitive to negative returns than the former, deriving a positive benefit from investing responsibly, thereby compensating for financial underperformance.

In the bond market, a similar observation, albeit on a smaller scale (Bloomberg, 2020), is emerging regarding the difference in the performance of issues by ESG-leaders companies and that of ESG laggards. However, in the green bond market, performance is mixed according to analyses. A comparison of a green bond index (the Barclays MSCI Euro Green Bond) with a “normal” index (the Barclays Euro Aggregate Corporate) shows that the latter has experienced a drop in return of 2.7%, compared with 2.9% for the former (Marsh, 2020). Conversely, another analysis, also using two indices, the ICE BofA Green Bond index and the non-green synthetic index, shows a sharp decline in the difference between green and non-green spreads (spreads over risk-free bonds) when risk sentiment peaked. This phenomenon reflects a relative out-performance of green bonds by 35 basis points during the first weeks of the crisis (Ebba, Michaelsen, 2020).

The attractiveness of sustainable financial products could favor long-term structural adjustment due to paradigms that revalue environmental and social issues. By confirming its resilience and benefiting from a context that puts social matters back at the heart of the economy, sustainable investment could become much more mainstream. In the context of the ongoing consultations on the next Sustainable Finance policy package, the European Fund and Asset Management Association (EFAMA) has

10. Green Bonds fund projects with positive environmental outcomes. Social bonds fund projects with positive social outcomes. Sustainable bonds fund projects that have both environmental and social outcomes.

11. Green issues are just over \$5 billion in March compared to \$29 billion in January and February 2019, and over \$15 billion in March 2019.

expressed its willingness to see social issues, in particular “human capital and societal imbalances”, at the center of the European Commission’s work, stressing that “the virus epidemic has highlighted the flaws in our societal systems and is likely to widen the gap even further” (EFAMA 2020). Moreover, in the transition to a low-carbon economy, “brown” assets, i.e. assets in hard-to-abate sectors, could see their value decline, unlike sustainable assets, which would benefit from increased performance. The current health crisis accentuates the importance of resilience. With its significant physical and transition risks, the climate emergency should also lead investors to evaluate and value sustainable and long-term investment strategies.

While the pandemic is a symptom of the massive loss of biodiversity - human alteration of the environment leading to the emergence of zoonotic diseases (Cavicchioli et al. 2019) – financial markets are paying new attention to natural assets such as water, living organisms and land. In a press release, four French funds thus call for «the financial community to address this subject in the same way as the climate» and invite the development of appropriate quantitative indicators (AXA Investment Managers et al. 2020).

Many regulators and market participants have already taken initiatives in this direction. In France, the Government intends to extend in 2021 the application of article 173 of the law of August 17, 2015, which obliges investors to publish with transparency their integration of ESG criteria in their investment operations, to the preservation of the biodiversity of ecosystems and natural resources within the scope of environmental objectives (National Assembly 2019).

One of the first tools linking environmental change and its impact on the economy was developed by the Natural Capital Finance Alliance (NCFA) in partnership with the United Nations Environment Programme’s Nature Conservation Monitoring Centre (WCMC), the Exploring Natural Capital Opportunities, Risks and Exposure (ENCORE) tool. Explicitly developed for financial institutions, ENCORE covers many types of natural capital and enables banks, investors and insurance companies to assess the risks posed by environmental degradation.

As underlined by the Commission in the framework of the ongoing consultations on the sustainable finance agenda, “It is therefore important – now more than ever – to address the multiple and often interacting threats to ecosystems and wildlife in order to guard against the risk of future pandemics, as well as to preserve and enhance their role as carbon sinks and climate adaptation” (EC 2020). As the next COP on biodiversity is scheduled to take place in September 2020 in China, it will be interesting to see, once this conference is back on the agenda,

how and at what level of urgency the lessons of the covid-19 crisis will be addressed. Various fiscal, monetary and regulatory measures can be recommended to redirect financial flows towards a sustainable recovery over the long term.

- **Maintaining environmental regulations and frameworks for action:** industrial lobbies, which were already manoeuvring before the crisis, are likely to keep requesting the suspension or relaxation of environmental standards. It will be important that public authorities can resist it. In China, the government has already watered down the enforcement of environmental laws in the name of economic priority. In the European Union, some states and companies are questioning the Green deal. In March, the Czech Prime Minister called on the European Union to “forget” the Green Deal and focus on the pandemic, followed by the Polish Secretary of State for Public Enterprises, who called for an end to the carbon trading scheme. The European Plastics Converters lobby called for the abandonment of Directive 2019/904, which bans single-use plastic products from 2021 (Malinger, 2020). The Green Deal, whose solidity will be put to the test, may come out either significantly weakened, or strengthened.
- **Conditioning public financial support to polluting industries:** As recommended in the report to US regulators (Carney, Schapiro, Jones, & Bloom Raskin, 2020), government aid to companies in highly polluting sectors should be accompanied by commitments to reduce their emissions. The Canadian government has adopted such a framework in its stimulus package. In France, the Ministry of Economy Bruno Le Maire mentioned three pillars conditioning State aid to the automotive industry: energy transition (for example, Renault must join the alliance for electric batteries), competitiveness and relocation (BFM interview of 11/05). For the airline sector, support to Air France KLM should go with a 50% reduction in the company’s CO2 emissions on domestic flights by the end of 2024 (Les Echos, 2020).
- **Providing green investments:** While a transition to a low-carbon economy requires an estimated \$2.3 trillion per year over ten years in the energy sector alone, massive investment would be critical. This is advocated by many actors, such as Amar Bhattacharya and Nicholas Stern, who warn against austerity policies in the recovery and instead encourage massive green investments (Stern & Bhattacharya, 2020).

- **Reorienting subsidies away from polluting sectors:** in the same direction, in 2018 while direct price subsidies for fossil fuels reached over USD \$400 billion in 2018 globally¹² (IEA 2019a), and bank financing for over 1,800 companies active across the fossil fuel lifecycle amounted to USD \$654.123 billion (RAN 2019), all or part of these funds could be allocated to finance energy transition (energy efficiency, renewable energies, sustainable transport and housing, investments in natural capital, reconversion to employment).
- **Decommissioning of the capital stock in highly polluting sectors:** faced with the risk of stranded assets, which the oil price crisis has highlighted in a very exacerbated way, a very proactive action would be to not support and no longer invest in so-called “brown” assets. Investment would be redirected to support the retraining of employees in these fallen sectors. However, as Christian de Perthuis points out, if such a choice would represent «an incredible accelerator of transition, (it) would be equivalent to prolonging the rationing logic imposed on the population from the period of confinement. A totally politically unthinkable option. »
- **Strengthening disclosure requirements on climate risk assessment:** The COVID-19 pandemic demonstrated how rapid and widespread disruption of economic activity can be, including for well-known risks, underlining the importance of preparedness and proper risk assessment. For governments, while the crisis has increased deficits and exacerbated the risk of sovereign default, the development and implementation of mandatory global standards for assessing and disclosing physical risks related to climate change is critical to preserving financial stability. Economic and financial risks exist for carbon-intensive economies, especially oil-producing countries, and therefore increasing risks of default or of revaluation of outstanding debt. To date, climate risk disclosure has focused mainly on listed equities and, to a lesser extent, corporate bonds (Finance for Change & South Pole, 2016). However, sovereign bonds represent one of the largest asset classes. A dedicated framework for these products would therefore be necessary. For companies, detailed and specific information on current and future exposures and vulnerabilities to climate shocks would help lenders, insurers and investors to better understand this risk. Continuing the efforts of the Climate-related Financial Disclosure Taskforce, enhanced and harmonised disclosure requirements will better protect financial markets and the real economy against systemic risks. The IMF reiterated this imperative in May 2020, deploring the lack of assessment of the physical risks associated with climate change by equity investors and calling for mandatory disclosure (Suntheim & Vandembussche, 2020).
- **Reinforcing disclosure requirements on ESG integration:** Similarly, the requirement for better and more standardised ESG information should be further encouraged. In the United States, many regulators and financial actors, such as SEC Chairman Jay Clayton, have stressed the importance for companies to publish reliable and granular data on the effects of the pandemic on their activities, as well as on their efforts to protect the health and well-being of their staff and customers (Clayton & Hinman, 2020). An important trend is the growing willingness of investors to better appreciate corporate efforts to address issues of racial justice and equity. The American ESG asset manager, Calvert Research & Management, for example, has indicated that it will begin to require companies to publish their diversity policies (Streur, 2020).
- **Pricing negative externalities:** Economic activity creates massive indirect costs to the environment and society. Failure to internalize these costs is a market failure. Many of these negative externalities - such as environmental degradation, child labour and other forms of social exploitation, tax evasion and corruption – are not reflected in the market value of companies. To counteract this, a much higher quantification and price of these externalities would generate a positive risk premium, which could redirect investments towards sustainable goals and avoid disasters.
- **Clarifying and tightening access to sustainable labelling and certification:** to avoid greenwashing and close the door to purely commercial considerations, stricter criteria for obtaining green and sustainable labels should be promoted. The decision announced by the UN-PRI to remove, for the first time in 2020, from its list of signatories all those who do not meet its minimum requirements is noteworthy (Reynolds, 2020). As ICMA prepares to publish principles on transition bonds, a reform of its framework for green and social bonds would be timely. Welcomed measures would be the obligation for issuers and banks to refer to clear and quantified criteria for verifying the green or social aspect of the projects that the bond intends to finance – European taxonomy can play a major role in this aspect -

12. Oil is the most heavily subsidized energy carrier, expanding its share in the total to more than 40% according to IEA 2018 data.

and the tightening of procedures for verifying the use of funds, to avoid the misallocation currently allowed by the fungibility of these bonds.

- **Introducing adjustment factors in banks' prudential capital requirements:** depending on the “brown” or “green” nature of an asset, banks would have their prudential capital requirement revised upwards or downwards respectively. For loans to environmental projects, for example, banks could therefore lend with a lower capital coverage – the reverse would be true for projects in polluting sectors. This idea is still quite controversial; in its latest report of May 2020, the Network for Greening the Financial Sector refers to the risks of double counting, creating risks of capital distortion (NGFS, 2020).

Conclusion

The coronavirus crisis constitutes a “grey rhino”, to use the classification established by Michelle Wucker (Wucker 2016)¹³, an event that is very likely to occur and with a massive impact, but only happens after a long series of warnings. The disaster is now underway, but the signals are still there.

The grey rhinoceros serves as a compass to look to the future. Instead of waiting for a second tragedy, which the increasing number of extreme temperatures, natural disasters, declining biodiversity and other weather-related disruptions only confirm (Cavicchioli et al. 2019), accompanied by rising inequalities and a questioning of the social contract, it is time to act and implement a holistic change in societies built on environmental, social and governance pillars. The urgency of the short-term exit from the crisis can be combined with Europe's ambitions for 2030 with the Sustainable Finance Action Plan and the Green Deal. The health and social failures and shortcomings highlighted by the epidemic call for a review of the priorities for investment and protection of citizens. Support for sectors in difficulty should go hand in hand with environmental conditionalities, in line with commitments made in the framework of the Paris Climate Agreement. Social and ecological challenges are part of one solution. Today's constrained behaviors invite us to imagine another model, preferring shorter circuits and energy sobriety.

Such a model could be achieved not by ad-hoc financing, with dedicated instruments that are the exception today, but by a global realignment. In the area of debt products, all bonds should target social and environmental projects, with a gradation by intensity (Eckart 2020).

The debate on the sustainability of public debt invites a local, national, European and global citizen discussion on a renewed societal model. Such a mobilization of private capital, coupled with public funding, would allow for a just transition, leaving no one behind, towards a resilient and environmentally friendly economy.

13. Based on the «Black Swan» concept developed by Nicholas Taleb, *The Black Swan: Second Edition: The Impact of the Highly Improbable*.

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