
Review

Globalization, Inequality, Environmental Damage and the Corona Pandemic - Lessons for Economic, Environmental and Social Policy

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Abstract: The rapidly expanding corona pandemic in 2020 brought the world to virtual economic stagnation. While the impact on the environment from suspended air traffic, idle industry and economic lockdown has been considerable, so have the economic and social consequences of the crisis. To make matters worse, the resulting state of stagnation is neither economically nor socially sustainable. Nevertheless, we need to ask ourselves what we can learn from the situation in order to explore the benefits of globalization, intercept similar crisis situations more effectively in the future and move towards more sustainable development on an ecological, economic and social level. This paper identifies the areas of expanded externality management needed to further improve environmental quality, digitalization, network expansion and basic income. These central issues need to be addressed both during and after the crisis in order to deal with problems of inequality and climate change mitigation for current and future generations. Concrete concepts will be put forward and discussed in the paper.

Keywords: corona, covid-19, crisis management, basic income, environmental politics, globalization, public policy, inequality, sustainable development

1. The Corona Pandemic and its Effects

Cases of a new and unknown lung disease from the Wuhan City region in the province of Hubei in China were first reported to the World Health Organization at the end of December 2019 [1]. The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), otherwise known as COVID-19, is a zoonotic coronavirus which is transmitted from animals to humans, and then between humans. On March 11, 2020, the global disease was classified by the WHO as a pandemic [2]. Coronaviruses can mutate genetically to create new outbreaks, as seen recently [3]. This makes it imperative for us to be prepared for ongoing pandemics and further crises.

The degree to which the various regions have been affected, together with the severity of the course of the disease, can be attributed to a number of parameters. In addition to the measures taken in the respective country, these include infrastructure parameters such as the provision of intensive care beds, individual disease profiles and sociodemographic characteristics, along with age and the environmental conditions in the respective country, such as air pollution, for example. All play a major role [4-9].

Since the outbreak numerous countries have taken drastic measures to curb the spread of the virus. These range from entry and exit restrictions to border closings. Entire lockdowns have been decided on to minimize social interaction and thus reduce the spread of the disease. International air traffic, tourism, transport, the production of non-systemically-important goods and a wide variety of shops have been closed in part.



Meanwhile, financial markets have tumbled globally in response to the pandemic as more and more economies experience economic distress. Workers have lost their jobs as companies have had to switch to short-time work, or close completely. Many freelancers, particularly artists and cultural workers, but also small businesses, can no longer keep going. In order to cope, some countries have designed a variety of aid packages. The German government, for example, has come up with a multi-billion-dollar package. In addition to supporting the health sector while fighting the pandemic, payments to cushion the loss of income for families, companies, freelancers and individuals have been promised and large economic structure funds with guarantees and loans have been set up [10]. However, in numerous cases those affected are not covered by government measures. Thus, in addition to restoring global health, the financial protection of social groups and companies, as well as accompanying macroeconomic measures to restore economic demand and promote economic growth, are still on the agenda of crisis policies.

The corona pandemic as a global threat means that the world is in a health crisis that is rapidly becoming a financial and economic crisis as well as a social one. In addition to the current COVID-19 pandemic, global climate change together with rising global inequality are the two decisive challenges now facing the world [11]. Not only are they the result of already existing global trends but also the force behind further economic, social and ecological crises [12]. By increasing intra- and intergenerational inequality, climate change and its effects will not only decrease the welfare of the current generation but also affect the welfare of future generations. Along with increasing local and global inequality, the outbreak and rapid spread of the corona virus has led many scientists to question current policies as they face the need for a sustainable development policy [13-17] to be better prepared for infectious diseases in the future and more able to react to environmental damage, inequality and their effects. While facing up to the current health crisis, society has experienced the limits of globalization. Currently, three globalization crises can be identified [18]. Firstly, there is the capitalism crisis, driven by ongoing growth and pushing ahead regardless despite rising inequalities and global injustice. Secondly, there is the ecological crisis, which affects the emergence of further pandemics and the way ahead despite environmental damage, global food security and global inequality. And thirdly, there is the corona pandemic as a health crisis that has burdened both the economic and social structures of society, thus further contributing to inequality and injustice on a local and global level. The implications from all this call for us to address the effects of globalization directly in a bid to fight against the emergence of these crises. Clearly, governmental policy must change from being a reactive to a preventive one.

The aim of this paper is to draw conclusions from the corona pandemic for future economic, environmental and social policy. In particular, suggestions with a focus on the economies of Germany and the European Union (EU) must be conceived in such a way that they can be transferred to other industrial states, at least in part. This paper focuses on the connection between globalization, environmental damage, inequality and the emergence of pandemics. For only the combination of economic, environmental and social policy objectives as a strategy following the crisis can contribute to ensuring the sustainable resumption of economic activities and thus contribute to sustainable development. It is imperative to reduce the likelihood of outbreaks of further pandemics by effective environmental policy regulation and to strengthen the economic and social robustness and resilience of the countries affected in the event of future pandemics. The authors are aware that the strategies and measures suggested here are intended as pointers in the direction to be followed. They are not regarded as a ready-made solution to all problems. Instead they are considered by the authors to be feasible, as something that could make a meaningful contribution to a necessary transformation of the basic economic and socio-political orientation of the countries involved.

In the second section, the relationship between globalization and ongoing economic growth is presented that drive environmental damage and inequality and thus motivate

the need for a sustainable transformation. This section serves to promote an understanding of the emergence of global problems and crises which are primarily rooted in growth constraints and the failure to consistently address externalities at the environmental and social level. It is followed by a brief overview of the bottlenecks identified during the corona pandemic. The implications should be considered as an impetus that offers concrete measures for future economic, environmental and social policy in, and after, the crisis.

2. Globalization, growth and the need for a sustainable transformation

The connection between economic growth and environmental damage is by no means new to the discussion and has been addressed by numerous researchers.¹ With increasing economic activity, the consumption of finite resources continues to rise despite improvements in efficiency. For, along with the increasing scarcity of resources, global emissions and pollution are also increasing. There is no doubt that the current economic system is unsustainable and that the destruction of our living environment is a major long-term threat [12, 19]. As early as 1972 the Club of Rome declared that, in a world with finite resources, infinite economic growth was not possible and appealed for a transition to sustainable development [20]. However, in the last century a global economic system has been established that equates growth with welfare and social security. In times of crisis, growth is seen as capable of solving economic and social problems, as we have seen in the corona pandemic. Likewise, the human-made effects of a growing economic system on climate, biodiversity, air quality, and other environmental parameters as well as water and food security, inequality and justice, have recently posed a threat to long-term human health [21-25]. It is therefore not surprising that more and more researchers see a connection between the corona pandemic, globalization, growth and its effects [13, 19, 21, 26-27] and ask the question what form sustainable transformation could take.

The COVID-19 pandemic is taking place in a complex capitalist context that is easy to follow in global production chains. The capitalist system, with its tendency to expand the division of labor, thereby increasing social differentiation and inequality while steadily increasing productivity, is also reflected in the consequences and effects of the pandemic [28]. The steady expansion from local to global markets in the course of globalization is overcoming the once natural barriers that prevented the spread of pandemics by keeping them locally contained.

There are a number of approaches to look at the concept of globalization. In this paper, we would like to link capitalistic driven globalization, and especially its effects, to three types of change: spatial, temporal and cognitive [29], relating this to growth and the compulsion to grow.

Spatial change includes the free movement of goods, services, information and people across national borders. However, these are accompanied by the movement of emissions and environmental externalities that arise on a national level to become a global, or at least nationwide, problem. There is no doubt that globalization has contributed to wealth creation through free markets, vaccination programs, infrastructure development, water provision and the increase in public health systems in many areas of developing countries, including China and India [13]. However, the same process has also led to ecological destruction, not only in terms of climate change, but also in pollution and the destruction of biodiversity and habitat [19]. This is evident not least in the evolutionary outbreaks of viruses such as COVID-19. Global networking not only favors trade and the mobility of people in private as well as on the job market, but also examines the question of global externality management in order to counter climate change and environmental damage.

In the event of an outbreak, this free movement of goods, services and people ultimately accelerates the rapid spread of the above, as happened with the SARS disease in

¹ See Brock & Taylor [106] for a review.

2003 [23, 29-30] and has now been observed with the COVID-19 disease. Since all this is well known it should have led to measures to increase resilience and restrictions in the free movement of goods after the first SARS crisis. However, the collateral damage to health, the environment and the social system appears to have been gauged as manageable, or too insignificant to warrant being reacted to. One way or another, adequate adaptive economic, social and political learning did not happen.

Temporary changes affect both our time perception and our time management. Cognitive change describes how people look at the world around them. The influence of the media, advertising, as well as politics, religion and research, all affect the desires and needs, values and beliefs, as well as the knowledge and goals of the individual. These changes in the course of globalization lead to ever-increasing pressure towards growth. Changes in the perception of time put pressure on individuals not to miss out on anything. Combined with the need for consumption endorsed by the media and companies, as well as increasingly cheaper products due to increasing productivity and producing in third world countries, growth is expanding. And in the process, it is driven by structural and psychological factors [31-32].

Structural growth is mainly linked to spatial change and arises primarily due to the problem of the view of the Gross Domestic Product (GDP) as a welfare indicator [31]. For the GDP as a measure of economic growth is still widely equated with social welfare, quality of life and progress. Due to the way GDP is calculated, any increase in the consumption of natural resources that is accompanied by CO₂ emissions, waste and environmental damage [19, 33] has a positive impact on the GDP. The truth is that while negative externalities should contribute to its shrinkage, they don't if they aren't priced. Central to the critique of the GDP as a welfare indicator therefore is its calculation in monetary terms as well as its ignorance of natural resource consumption and its effect as a negative externality. This is particularly evident in the current crisis, where most of the measures and strategies are aimed at maintaining or boosting growth after the crisis (for example [10, 34-35]).

The forces behind psychological growth are linked to the temporal and cognitive changes brought about by globalization. Individuals are dependent on money in order to meet their culturally-induced demands for material self-fulfillment [32]. Satisfying these consumer needs demands immense economic growth however. And such growth is only possible through the use, and overuse, of natural resources such as air, water and raw materials and the exploitation of animals in agriculture, and people in developing and emerging countries. This growth drives local and global inequality as well as injustice for humans and their environment [19]. [36] considers the psychosocial function of consumption, the source of our materialistic lifestyle, as the most powerful force behind the ecological crisis.

Decades of increasing globalization and its consequences have contributed to a global ecological crisis and brought about the current pandemic as an expression of years of environmental destruction and human intervention in ecological systems [18]. While public goods and services have been privatized and monetized to increase economic growth, the risks and effects of this growth have been socialized [12]. Globalization has created numerous institutions to ensure the mobility of people, goods and services and consequently promote free trade, but it has failed to create common, collective rules for environmental standards, labor markets and health policy, nor strategies for the emerging redistribution problem through common social policy [12-13, 16, 21, 37]. One element in dealing with the crises of globalization is therefore the provision of (global) public goods [38]. These are necessary to address the global problems of environmental pollution, climate change and global inequality. This reflection on global collectivism [22] is necessary in the current global crisis, not only in relation to the corona pandemic, but also for sustainable development.

This leads directly to the question of how to shape a corresponding reform and transformation policy or movement based on these normative challenges. To this end, suggestions for measures and strategies will be made in the next section to promote a socio-ecological transformation in Germany and Europe with the aim of countering the crises of globalization in the long term.

3. Implications of Crises

The ecological and social crises are the most serious of the three crises mentioned above and they will not diminish in the medium term, unlike the health crises of the Corona pandemic. Thus, it will continue to be necessary to persist in climate change efforts, further reduce emissions and take measures to rethink our relationship to civil society and politics. However, the social crisis is further exacerbated by the pandemic due to increasing insolvency, debt and poverty, as well as unemployment and inequality. When resuming economic activities and overcoming the health crisis, care must therefore be taken not to act at the expense of the other two crises, but rather to question the causes behind them.

In European politics in particular, it is now important to choose together a path that creates a stable community of values, one that is better prepared for crises, one in which we support each other during and after crises. In the long term, both fiscal policy issues such as taking on the financial burden of the corona pandemic as well as a common environmental and social policy direction, must be the goal of EU policy. Europe could play an important pioneering role internationally as a model for common standards in the areas of health, welfare, environmental policy, the self-determination of self-determined citizens and environmental policy [16].

3.1. Reduction of Environmental Externalities

3.1.1. Air Pollution and Climate Change

As mentioned above, the course of COVID-19 depends on a number of parameters. Studies show that the disease levels are increasingly critical for patients from areas with high air pollution [5, 8-9]. Utilitarian researchers are asking whether state-ordered quarantine (especially in China) has saved more lives overall than the COVID-19 disease due to the rapid drop in air pollution [15, 39]. In 2016 particulate matter pollution alone caused around 412,000 premature deaths in 41 European countries [40]. This fact is not intended to be a positive assessment of the handling of the corona pandemic in this case, but it illustrates the advantages health-wise of improving air quality in many countries and thus highlights a trade-off between environmental quality and economic power that is often neglected when it comes to economic, health and social policy. Not only increased pressure on the health system due to rising costs, but also the lower productivity of stressed workers and the associated lower yields in agriculture and forestry [40] must be factored in as a consequence of air pollution.

There is therefore room for further standards to be specified and tightened up to reduce air pollution sustainably [7, 41] and these standards must be accompanied by social policy instruments [11-12, 19]. Globally, regulatory instruments, such as bans, maximum limits and minimum standards, which are particularly cheap to implement, are playing a significant role in environmental politics [19]. From an economic perspective, pricing approaches, such as cap-and-trade systems, are a more cost-effective means of achieving environmental goals than regulatory measures. The quantity tax approach to solving externality problems goes back to Pigou (1920)[42]. Here the optimal amount of tax is based on the marginal cost of the externality to be eliminated. By increasing the market price for every unit of negative externalities, whether emissions or pollution, market actors are incentivized to reduce the production and consumption of environmentally harmful goods and services. Against this background, the carbon tax introduced in many countries in the European Union could be an effective means to combat climate change [43] but must be checked for its effectiveness. Higher prices for carbon emissions would thereby provide

signals to both consumers and firms about goods and services, as well as input factors that should be used sparingly, or not consumed at all, and that provide additional markets and incentives for innovations in low carbon products and services [43]. Appropriate carbon pricing could also be part of a promotion strategy for regional production and consumption (see chapter 3.1.3.).

When selecting suitable measures, attention must also be paid to the possible trade-off between mitigating climate change and solving the inequality problem [11, 21]. This should also occur through other approaches to reduce carbon emissions and mitigate climate change, such as personal carbon trading [44-46] or a carbon charge and dividend [47]. The concept of social justice would then serve as a guiding principle in the selection of appropriate measures and thus also promote political feasibility [48]. Appropriately designed in combination with a socio-political redistribution element, such measures could help to combat the climate change problem without doing so at the expense of low-income earners.

Further measures, such as the introduction of road speed limits or the expansion of renewable energy sources, can also help to combat climate change [11]. Likewise, environmentally harmful subsidies in Germany and the European Union should urgently be reviewed and abolished. These are numerous in the energy and transport sectors, in housing and construction, as well as in the agricultural sector. In Germany they include direct and indirect subsidies, amounting to 57 billion euros annually [21, 49-50]. Reducing air traffic would also make a significant contribution to reducing climate change.

3.1.2. Agriculture and dietary decisions

A change in nutritional behavior with a lower proportion of animal products can also significantly reduce emissions as well as other external costs [11, 41, 51-55].

In terms of environmental impact, livestock is one of the biggest polluters in food production. While the entire food system accounts for 30% of anthropogenic emissions, more than half (16.5%) come from livestock [51]. Not only the emission of greenhouse gases, but also the consumption of fresh water, energy, land area, habitat degradation, loss of biodiversity as well as the generation of waste occur at the expense of the environment [19, 51, 56-57]. Thus, the external costs of a meat-based diet together with the additional consumption of dairy products are much higher than those of a purely plant-based diet, or a diet with a reduced share of meat and dairy products [11, 54, 58-63]. When the hidden costs of food production on the environment and our health are included in the equation, food is twice as expensive on average [19, 58, 64-65]. An increase in welfare combined with low market prices also contributes significantly to food waste [51, 55, 66]. It is not surprising that changing eating habits by cutting down on meat consumption has the greatest potential for reducing environmental externalities [53].

In addition to its environmental impact, high consumption of animal products also threatens global food security [28, 67]. While approximately 70% of agricultural land is used to produce feed for livestock, a plant-based diet requires only a fraction of this amount [68]. Apart from problematic land-use, the illegal deforestation in the Amazon for cattle farms and soya is a serious problem for climate change [69].

Factory farming has also been criticized for favoring the emergence of pandemics [11, 28, 51]. Emerging infectious diseases, like COVID-19, are a growing threat to global health as well as to the economy and global food security. Originating from animals, the proliferation of diseases is driven by economic development and land use as well as agricultural practices and intensive farming which go ahead relentlessly with deforestation, environmental exploitation and degradation [28]. Thus, reducing the amount of meat and dairy products in an average diet has the potential to reduce the risk of pandemics in the future too [11, 51].

In terms of health impacts as a result of introducing a diet with a lower share of animal products, there would be a direct reduction in nutritional risks, such as cardiovascular

diseases and obesity [70], so that an additional spin-off would take pressure off the health system [71].

This could revive the discussion on the taxation of animal products, for example by extending the carbon and greenhouse gas tax to the agricultural sector [19] or by raising a quantity tax [52] or an animal levy [72-73]. The important point here is that reducing the environmental impact of dietary habits, which goes along with higher prices and lower yields, does not increase social inequality [19] nor lead to food insecurity [51]. Pricing approaches with a complementary redistribution component [52, 72-73] could help use fiscal instruments to promote more sustainable eating behavior in a socially acceptable manner. Such policies could, for example, cover subsidies for healthy and sustainable food alternatives [74], social safety nets for vulnerable households [51] and even basic income (chapter 3.3.2.).

In addition to an absolute reduction in the amount of meat in the diet, the efficiency of animal husbandry, as well as the agricultural sector in general, can also be improved by promoting regional production and consumption [41], shorter transport routes and the reduction of waste [53].

3.1.3. Production and consumption chains

The promotion of regional production and consumption plays a central role in reducing externalities. This applies not only to the reduction of emissions by shortening the delivery routes and reducing the storage and cooling times of goods. For the pandemic has taught us that in times of border closings and economic lockdowns, entire supply chains can break down. As a result, essential goods, such as medication and suitable protective clothing for nursing staff in the health crisis, may no longer be available [13, 26-27], or basic foodstuffs may be undersupplied [28]. While widespread globalized production is often cheaper and more efficient, it carries the higher risk that essential goods will no longer be available in times of crisis.

COVID-19 is also teaching us how to deal with the problem of global food security during pandemics. Health policies have led to a decline in agricultural and food flow, especially in developing countries, resulting in decreasing food supplies, rising unemployment and decreasing household incomes [28][28]. This affects countries on the African continent as well as developed countries in the European Union [75]. Thus some east European countries, including Russia, have introduced restrictive export measures for food in order to prevent domestic food shortages [76-78]. Food-importing countries with vulnerable food systems would therefore benefit from the promotion of regional production to secure national demand [28]. A cost-effective assessment of essential goods and services must therefore be made to investigate whether regional provision would be possible and meaningful [27].

3.2. Digitalization and worldwide networking

3.2.1. Online retail and digital concerns

Digital systems have taken on a new significance during the corona pandemic. They allow information to be generated and disseminated quickly and ensure interpersonal communication in times of social distancing. E-commerce, or online retail, that was already a rapidly growing market segment before COVID-19, has become increasingly important during the pandemic. While real sales of department stores declined by 42.1% in the period from 1999 to 2019, sales in online retail goods grew by 120.3% [79]. Boosted by lockdowns and social distancing rules, it is not surprising that online retailers are seen as the economic winners in the pandemic. In addition to the larger product line at lower prices, the convenience of online purchasing and home delivery, and the associated time saving [80], the possibilities of contactless shopping and independence of location-based opening hours have been significant drivers of the success of online retail during the pandemic. In December 2020, this saw a 31% increase in real sales compared to the same month the year before [81]. It is assumed that online retail will continue to grow in the

future and that cannibalization effects between digital and stationary retail will further increase [80]. A special role is played by the online retailer Amazon, which, according to IFH Köln (2019) [82], accounts for 31% of all retail sales in non-food trade in Germany. In contrast to its competitor eBay, which acts purely as a platform provider, Amazon has taken on a hybrid role and acts both as a provider of the platform and as a retailer on the market [80]. Amazon generated 48% of total online sales in 2019 [83]. The restrictions on the economic power of online corporations, such as Amazon, Facebook and Google, range from control and regulation to the breaking up of monopoly positions [21]. Legally, however, no monopoly position in the current economic business of these corporations could be proven at the EU level [84]. In addition to the economic power that these corporations possess, comes the fact that their social influence is considerable. Their numerous coordinated products and services put them in a position to shape and influence essential social contexts in the network, such as consumer behavior, information and communication, as well as relationships [84]. This influence and its regulation have thus become central factors on the path to sustainable development.

3.2.2. Labor market, education systems and network expansion

Digital opportunities have proven to be particularly useful in the areas of both the labor market and the education system in times of crises [38, 85-86]. Companies have realized that most business trips across the globe can be managed via video conference. The use of video conferences has also proven to be suitable for politicians when holding urgent crisis meetings. Many employees have successfully carried out their work in home office without detriment to the company from indolent employees who have to be controlled. And pupils and students can access learning content at any time, from anywhere in the world, through asynchronous learning, digital teaching models and digital classrooms. All this was not made possible by the crisis, but the crisis has shown through the pressure to change that the long-standing skepticism towards adapting the technical possibilities was unfounded. Digital opportunities could therefore be used to promote a future with less mobility, for example, through reduced car or air travel [11].

While many areas of professional life have shown that a larger proportion of home offices and the abandonment of business trips and face-to-face meetings is possible and reasonable [86-87], the hurdles of home schooling, such as the lack of personal contact, have been demonstrated in the educational sector [88-89].

Switching to digital solutions not only facilitates the rapid containment of disease in health policy crises but also has an ecological and socio-political impact. Avoiding air travel and commuting by increasing home office days or reducing office space, obviously all have an impact on global emissions and resource consumption and can therefore lead to significant improvements in environmental quality [86]. In terms of social effects, the situation in the education sector has also revealed that there are significant grievances when it comes to equipping pupils and students with the necessary technical means or guaranteeing the necessary parental support. Many of the latter are unable to take advantage of learning opportunities, such as digital instruction, at home. Low-income households in particular lack the technical possibilities and know-how to support their children optimally in home schooling [90-92]. Some groups even see home schooling as a threat that entails increasing inequality and injustice in the educational sector. Clearly, large investments in the public education sector are needed to provide school children from poorer households with the technological opportunities that they in particular currently lack. The present crisis demonstrates that sociopolitical transformation is imperative in the face of worsening social inequality and educational injustice.

Increasing digitization also goes hand in hand with productivity gains that can further drive growth and thus produce more goods in less time. It is therefore necessary, in the interests of sustainable development, to think beyond increasing growth to alternative economic policy goals. For example, gains from higher productivity could be transferred into a reduction in working hours so as to increase well-being [21, 93]. Such working time

degrowth could be an important element in turning away from the growth imperative. The reduction of weekly working time due to productivity gains could thereby decouple income generation from health-related work stress and the compulsion towards consumption [93]. One important element of digitization is network expansion, particularly in Germany, where it is becoming increasingly clear that we have failed to expand digital networks for too long [94-95]. Remote regions still have extremely weak internet connections than can render home office or home schooling tedious, or impossible as connections break down regularly due to the high demands of streaming portals and video conferences. Clearly, Germany lags behind internationally by comparison. These improvements include the necessary advancement of network expansion. For only this can meet the requirements of digitization in order to realize the ecologically valuable opportunities of video conferences, home offices and decentralized work.

3.3. (*Universal*) Basic Income

The extreme social consequences of the economic lockdown in the Corona crisis have led to a massive increase in social inequality. In Germany, for example, many workers have had to switch to short-time work. And while smaller companies in particular are facing bankruptcy, mini-jobbers are losing their livelihood. They fear the marked increase in personal bankruptcies, especially due to rent and loan obligations, where the state has to pay billions in aid packages [10] to step in but still fails to help enough. Even worse is the economic situation for people in countries where there is limited social security, as in Germany. In Italy, groceries have been looted as the population fails to earn enough to get by [96][96]. Labor market policy, in particular, plays a decisive role in reducing inequality, especially at the national level. But it is not only during crises that increasing automation and digitalization, combined with rising productivity, lead to more precarious working conditions and thus to a growing need for taking steps that would guarantee better distribution of productivity gains and income security for all [21]. Universal basic income could be such an approach.

The discussion around a universal basic income is thus becoming more forceful as it puts forward a possible solution to the inequality problem, especially now, in a time of crisis [13, 97-99]. This has been demonstrated, for example, by the introduction, from June 2020, of a variant of basic income for the poorest in Spain in response to the social effects of the Corona pandemic measures [100].

3.3.1. Universal Basic Income as part of crises policy

Let us consider such a universal basic income as "an income paid by a political community to all its members on an individual basis, without a means test or the requirement to work" [101] (p. 8). Moreover, this unconditional income is "paid in cash, rather than in kind" [101] (p. 8) and "paid on a regular basis, rather than as a one-off endowment" [101] (p. 9). The beneficiaries of basic income could be citizens of a particular country or of the European Union.²

Below we take a closer look at the approach of a net (crisis) basic income as put to the German Bundestag in petition 108191 (2020) [98]. Regardless of whether you are a supporter or opponent of a basic income, you should think through the functionality of such a construct in a crisis such as the one we are now in and consider its introduction beyond the scope of the crisis as a potential partial replacement for traditional social policy.

The aforementioned net basic crisis income is composed of two elements. The first is the payment of an unconditional basic income during the crisis. The amount of such a crisis basic income would have to be chosen in such a way as to maintain the minimum standard of living of the individual person. Let us start with the supply of food and essential goods. The amount of the monthly payment per person could be determined on

² At this point, however, we do not want to deal in detail with the conceptual design of a universal basic income.

the basis of the average consumer spending by private households. A one-person household in Germany spent an average of € 1,706 per month on private consumption [102]. In order to assess a minimum living standard, all consumption expenditure that is not absolutely necessary in the crisis could be excluded. If the minimum monetary need were limited to food, clothing, housing, health and mobility, the amount would be reduced to € 1,213 for a single person. The average cost of living and energy would thereby be € 662 [102]. These sums would decrease proportionally in multi-person households. In addition to basic monetary needs, payments such as rent, interest on loans and other repayment obligations and liabilities are problematic. When people lose their jobs due to the crisis, or have less money available due to short-time work, they will soon run into financial difficulties as ongoing expenses still have to be paid although earnings have dropped significantly. The same applies to companies and freelancers who have to close down their business as a result of the crisis or who suffer severe losses due to declining consumer activity.

The second element of this approach relates to the temporary suspension of financial obligations such as rent payments, loan servicing and payment of bills, such as wage payments and payment for goods and services from before the crisis began.³ In this case these obligations will be officially suspended for everyone affected by a cut in income during the crisis period. Unlike wage income, which is significantly reduced, or completely suspended by the lock-down during the crisis, capital income remains largely unaffected. This leads to an asymmetric distribution of crisis-induced risk and thus to an asymmetric distribution of burdens in the crisis between performance-related and non-performance-related income, as is the case with interest, principal, lease and rent payments. All this increases inequality between income earners. By suspending these payments, the asymmetry in the treatment of income in the context of crisis management measures is counteracted, thus creating equality between different types of income earners. Nevertheless, everyone is paid a corresponding net basic income⁴ to cover consumer spending on essential needs. By suspending the financial obligations, this amount could be reduced by the average expenditure on rental payments and would therefore still be € 551 for a one-person household, with half the amount for children.

Businesses, landlords, credit institutions and all those who have lost out on their income from rent will be compensated for their losses. Ultimately, this means that those whose economic activity is hampered by the crisis and therefore no longer have an income will be compensated. With a basic income approach that is designed appropriately, their standard of living and benefits will not decrease during the crisis. At the same time, government crisis loan assistance to pay current rent and loan obligations would be stopped. Such a net basic income would counter the asymmetric treatment of the standard crisis programs since it considers the need to be able to pay rent and loans. The net basic income has the advantage of making the most of a crisis that confronts us with many uncertainties and constantly emerging social and economic policy challenges.⁵

This solution may prove to be more fiscally advantageous than ongoing government aid measures that are designed to maintain regular payment obligations [103]. By means of a suitable source of finance, for example through VAT financing in combination with an environmental tax dividend (climate premium) or a wealth tax, such a basic income can emerge as crisis-proof. The suspension of current financial obligations is normatively justified by the maintenance of a basic income. In the long term, the mechanism could be

³ See, for example, Kaas [107] with a similar proposal.

⁴ The gross basic income includes the payment obligations mentioned. The net basic income is the amount upon suspension of interest payments for renting, leasing, lending, etc.

⁵ Unforeseen and (un)deliberately covered events (e.g. because they are not classified as necessary to save the budget since the group concerned is politically uninteresting) which do not allow target accuracy are adequately covered by the basic net income as an ex post governance rule.

used flexibly as an unbureaucratic instrument in times of crisis that can ensure that citizens are provided with income without delay, and without prior or subsequent needs tests.

After the crisis, the basic income mechanism could be extended in the direction of increasing economic power, for example as a socially acceptable share of GDP (as a common good) towards a participatory gross basic income and then melted back to net basic income in the subsequent crisis. To a certain extent, this basic income concept would be an automatic crisis and prosperity mechanism, unlike the traditional transfer system, which tends to be overregulated and presumptuous and only seems to be appropriate for individual cases. At the European level, a basic income provided by the European community (as solidarity income) could be a suitable instrument for securing minimum needs across the EU or the euro area in order to help citizens and companies quickly and effectively in times of crisis, securing the EU or the euro area as an advantageous structure for all citizens. In this case the so-called Euro-Dividend could then be topped up and supplemented by national systems [104-105].

3.3.2. Universal Basic Income as part of climate justice

Depending on how it is financed, a basic income approach can have significant redistributive effects [11] even though it does not differentiate between recipients according to their needs or financial situation. A universal basic income, financed on the basis of an extended carbon tax, would thereby contribute to climate justice by providing equity. Equity is a central concept of climate justice since it assumes that each person across the globe has the same right to the environmental space [48]. If everyone receives the same amount of basic income, regardless of need or other income, each citizen would have the same share of the profits from pollution caused by emissions. At the same time, consumers would be taxed according to the environmental burdens they produce. The revenues from carbon taxation could thus contribute to a redistribution from large emitters to small emitters and, by distributing the basic income equally to everyone, to more equity. One proposal that argues in this direction is the idea of an international carbon charge and dividend [47], though it differs from the simple taxing and redistribution concept. In principle, the revenues from targeted environmental taxation can be used to subsidize rising product costs [16] in the form of an unconditional basic income, thus promoting a socially acceptable ecological change in production and consumption, for example to promote more regionality in consumption patterns.

4. Conclusion

Continued economic growth in the wake of globalization has led to increasing networking among the world's population. This strong connectivity has however not only brought advantages but has also led to an increase in inequality and injustice. This downside affects the environmental conditions in which people have to live, their social standards and distribution of opportunities, their wealth and income as well as their working hours and leisure options. The Corona crisis reminds us that for years we have failed to tackle the environmental and social policy crises conceptually and effectively, nor have we managed to combat them with an integrated approach.

This contribution identifies three important areas in the discussion about possible implications for the resumption of economic activity and for sustainable economic development:

1. Environmental Externalities
2. Digitization
3. Basic Income.

In the area of environmental externalities, current pricing instruments are not far-reaching enough. In addition to the necessary adjustment of carbon taxation and emissions trading, the general handling of externalities, such as nutrition and the promotion of regional production central to future environmental policy, should be included.

Digitalization allows for new possibilities, such as the elimination of business trips, home office and the flexibility of the labor market in terms of working-time and degrowth in general. Here, too, there is considerable need for investment in the expansion of networks and the necessary infrastructure. Digital change, especially from a socio-political perspective, should neither help to exclude nor discriminate against other social groups. Instead, investments in education and the flexibility of work models should enable the compatibility of digital opportunities with real work and education structures.

In times of crisis, and beyond, basic income is a necessary instrument to ensure that crises are dealt with quickly and effectively. In this article, we have outlined the essentials of a universal crisis basic income the conceptualization of which requires further research.

Above all, this has to focus on the effects of unconditionality compared to the needs test. Furthermore, the imposition of conditions and sanctioning, as well as the traditional policy maxims behind it and their effects on the economy should be investigated. In times of crisis, the proposal made here has good chances of paying off with or without relatively low tax credit when compared to standard crisis policy measures. However, the implementation of a concept that aims to go beyond the crisis should include compatibility with, or replacement of, other social benefits and discuss a long-term financing concept.

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