Risking the planet?

The pathologies and potentials of central banks' risk-based approach to the climate crisis

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Introduction

Both the global financial crisis and its aftermath and the Covid-19 pandemic shone a bright spotlight on the extensive powers of central banks. The magnitude of interventions in financial markets in both instances dwarfed efforts by fiscal authorities, not just illustrating the relative significance of central banks' role in economic governance vis-à-vis other state institutions but also highlighting the vital role they have come to play in the governance of financial capital that no longer simply governs itself. Deeply entangled with financial markets, central banks have become the guardians of financial capital and powerful agents of financialization (Irwin 2013; Tooze 2021; Walter and Wansleben 2020; Wansleben 2022). Operating in a markedly transnational fashion (see e.g., Marcussen 2006) and often enjoying far-reaching independence from governments, central banks are not only a vastly powerful but also a categorically different state actor in the financialized global political economy.

Thus, to understand the role of finance in a crisis that poses a more existential threat to societies than those referenced above, namely the escalating climate and ecological crisis, central banks are a pivotal piece of the puzzle – a piece that other disciplines have already started to investigate. As central bankers increasingly engage with the planet's climate, political economists and economic geographers have started to ask whether central banks might be "too green to be true" (Deyris 2023) or "climate governors of last resort" (Langley and Morris 2020), while others even see in them "an unexpected climate activist" (Siderius 2022). These attempts to make sense of the role of central banks in times of an escalating climate crisis contrast somewhat with the relative silence among economic sociologists regarding a new and accelerating dynamic.

In fact, over the past decade, central banks and financial supervisors have launched a flurry of climate-related speeches, coalitions, and policies. This development is driven and facilitated by the successful framing of climatic changes as climate risk, originally championed by coalitions of think tanks and financial institutions and later formalized through the efforts of national central banks such as the Bank of England, Banque de France, and De Nederlandsche Bank as well as intergovernmental and transnational forums such as the Financial Stability Board (FSB) and the newly founded Network for Greening the Financial System (NGFS) (DiLeo 2023; Helleiner, DiLeo, and van 't Klooster 2024; Quorning 2023; Siderius 2022; Taeger 2022). As climate risk, the planet's climate and its changes have become legible to central bankers, who can now attach them to their financial stability mandates.

While phenomena such as "green finance" or "environmental, social, and governance" (ESG) tend to dominate the public discourse on entanglements between finance and the planet's climate, central banks' climate risk frame is of a categorically different nature. Climate risk is not another expanding frontier of financial markets where what was previously outside of finance is being colonized and turned into a financial asset in the form of ESG funds or green bonds, nor is it a retreating frontier whenever there are pushbacks by Republican-run states in the US as part of an "ESG backlash." Instead, the frame of climate risk entangles the planet's climate not with a frontier but with the heartland of finance – that is, its foundational logic of balancing risk and return. Rather than the unidirectional expansion of finance as ESG, redefining risk in relation to the planet's climate seems to suggest a degree of mutual colonization of finance and climate.

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As effective as this risk framing might be to attach climate concerns to central banks, understanding the climate crisis as climate risk has been problematized as deeply political (Engen and Asdal 2024). As Leon Wansleben mentioned in the previous issue of this publication, a risk frame might not sufficiently account for the nonlinearities of climate system dynamics, for instance. More fundamentally even, due to the uncertainties of socio-environmental development paths, future impacts and dynamics are inherently incalculable and hence evade a narrow frame of risk (Beck 2002; Chenet, Ryan-Collins, and van Lerven 2021; Christophers 2017).

Economic sociology, however, has moved from the question of *whether* a climate-related threat or hazard can be captured as calculated risk to asking *how* this calculation is achieved and with what effects (Collier, Elliott, and Lehtonen 2021). Instead of categorically rejecting the framing of the climate crisis as climate risk, an economic sociology approach can foreground the conditions of its construction, the hierarchies and values imprinted on it, and the inequalities it produces. This, I argue, is one of the distinct values that economic sociologists can bring to a debate over the role of central banks in the climate crisis which is currently dominated by environmental, ecological, and political economists.

Given that central bankers have become agents of financialization over the past decades (see e.g., Walter and Wansleben 2020), it might seem intuitive to dismiss their risk-based approach to climate change as doomed to reproduce rather than reform or even transform the existing finance-climate relations of exploitation and harm. After all, the rediscovery of systemic risk and macroprudential supervision after the global financial crisis, for instance, only had limited effects on financial excess (Thiemann 2024). However, the climate risk frame is still in its infancy and not yet fully formed, which presents an opportunity not only for in vivo research to develop a precise diagnosis of central bankers' risk-based approach but also for interventions into an active policy debate.

Thus, this essay sets out to illustrate both the pathologies and the transformative potentials of central banks' emerging risk-based approach to the climate crisis. Pathologies materialize as specific detachments and attachments (Latour 2005) – or (dis-) entanglements, as Ute Tellmann has it in the previous issue – of the planet's climate and climate risk, which are achieved by categorization and quantification as well as the specific temporalities thus created. Transformational potentials take the form of an open and transforming substance of what climate risk in fact is, shifting actor constellations involved in this definitional struggle, and a widening in the epistemic foundation underpinning attempts to definitively frame the planet's climate as climate risk. The essay argues that while central banks threaten to normalize engagement with the escalating climate crisis under a risk-based regime that draws on existing valuation repertoires of techno-scientific capitalism, efforts to frame climatic changes as risk have given rise to dynamics by which financial assets are requalified through novel socio-material relations and which provide opportunities for a reformation of finance-climate relations. Economic sociology, my argument attempts to demonstrate, is uniquely positioned to develop such a nuanced critique of central banks' climate risk regime.

To substantiate this argument, the essay draws on the author's PhD research on the construction of climate risk, which was conducted between 2017 and 2021 (Taeger 2022). This research traced said construction from the creation of the first global climate risk disclosure regime now underpinning binding law in jurisdictions from Brazil to the EU, the UK, and Japan– the Task Force on Climate-related Financial Disclosures (TCFD 2023) – to the development of climate scenarios by the NGFS to quantify climate risk exposures across financial systems.

The pathologies of central banks' risk-based approach to the climate crisis

To make the planet's climate legible to central bankers in the form of risk, it initially had to be fitted into existing and familiar categories, frameworks, and calculative devices – i.e., the "qualculative" infrastructure of central banking (see Callon and Law 2005). Creating such attachments always implies a simultaneous move of disentanglement, as Ute Tellmann pointed out more generally in the previous issue (see also e.g., Callon and Muniesa 2005). In other words, attaching the planet's climate to central banks is a selective process rendering only certain finance-climate entanglements visible or represented.

In a first step, central banks collectively decided through the FSB to convene an industry-led task force – the abovementioned TCFD – to develop a disclosure framework for climate risk, i.e., fitting climate risk into the existing market-based financial governance approach (Christophers 2017). The TCFD framework has by now become the foundation for disclosure regulations across the world, providing the epistemic categories and shaping the informational raw material for finance to see and value the planet's climate (Folkers 2024). Two moves by the TCFD illustrate the selectivity of this qualculative construction of climate risk:

First, the TCFD integrated one of three climate risk categories flagged by the Bank of England in a previous report (Prudential Regulation Authority 2015) into another; that is, it rejected its status as a primary category of climate risk. Litigation risk (i.e., risk that companies might face from being exposed to lawsuits targeting their negative climate impacts) was subsumed under transition risk (i.e., risk stemming from the political, social, and technological transition to a low-carbon society by means such as climate policies, changes in consumer behavior, or technological advancements). Demoting litigation risk in such a way practically absolved companies from the obligation to make public what ongoing or potential lawsuits they are facing due to climate-harming activity. This not only reduces the visibility of ongoing lawsuits but also prevents a potentially performative effect of climate-related knowledge, as corporate disclosure of litigation risk might very well contribute to the realization of said risk; in other words, it might instigate lawsuits. By negating the need for companies to explicitly disclose their exposure to climate-related litigation and thus decreasing the visibility of litigation risk, the TCFD effectively decreased the threat of litigation, as plaintiffs would not be able to rely on corporate disclosures for building, strengthening, and identifying cases to be brought to court.

Second, established principles and practices of accounting were brought into the TCFD framework to translate climate-related knowledge into so-called decision-useful (i.e., financially legible) knowledge. For instance, the TCFD disregarded risks that corporate actions pose to the planet's climate and instead focused exclusively on climate-related risk posed to companies – the so-called single materiality perspective at the heart of the existing financial accounting and risk supervision regime. This focus on corporations as relevant entities for the formatting and filtering of climate-related knowledge also extends to the attribution of climate-related impacts, i.e., emissions. The TCFD followed the logic of the Greenhouse Gas (GHG) Protocol regulating carbon accounting, which effectively facilitates the disentangling of certain emissions from the corporations responsible for them by basing their attribution on the legal boundaries or the financial control of businesses rather than their role in the facilitation of global GHG emissions, as Walenta (2021) has shown.

After the metrics and categories of risk had been defined through the TCFD framework in this first step, central banks advanced the construction of climate risk by seeking to quantify it. Moving from the market-based approach of disclosure to a technoscientific approach to climate risk, a group of central banks formed the abovementioned NGFS, a coalition to share expertise and conduct joint research (Helleiner, DiLeo, and van 't Klooster 2024). A key tool they developed to quantify climate risk was a set of climate scenarios used by national central banks and the ECB to test the effects of different climate mitigation and climate impact scenarios on the portfolios of their supervised entities (FSB and NGFS 2022). To remain legitimate on this new terrain of climate risk governance, the NGFS relied on already well-established and widely accepted models and scenario assumptions such as those supplying scenarios for Intergovernmental Panel on Climate Change (IPCC) assessment reports. In other words, central bankers fitted their climate risk framing to a pre-existing calculative modeling infrastructure to mediate the (dis-)entanglement of the planet's climate and central banks.

This "fitting" created a particular set of attachments of the climate risk construct to climate-society relations. For instance, decarbonization efforts exclusively take the shape of techno-optimistic developments, such as large-scale carbon capture and storage deployment or price-based policy interventions within the imaginaries of the NGFS scenarios. Market frictions are largely neglected and so are distributional matters and justice concerns. What is more, both assumptions and model structures carry the imprint of a Northern gaze, that is, they have specific geographies (Mahony and Hulme 2018), while suggesting a neutral or global stance. Global epistemic hierarchies and inequalities imprint themselves on the calculative representations of soils, for example, where better data availability and greater academic research capacity mean that models are calibrated and designed based on European or North American rather than African soils. Proxy measures for the location of assets of economic value are based on the structure of industrial or post-industrial rather than agricultural economies. Thus, socio-environmental relations represented in these models and hence the NGFS scenarios are structurally disentangled from those in the majority world and have Western-centric, advanced-capitalist values inscribed in them instead. Thus, similar to the New York City flood maps examined by Elliott (2021), the calculative construction of climate risk is left detached from a host of alternative values and concerns. These disentanglements that were partially mediated by climatic and environmental sciences also highlight the need for a critical engagement with these disciplines, as discussed by Scoville in the previous issue – a critical engagement for which economic sociology, by virtue of its affinity to STS, is well suited.

The quantification of climate risk is only fully achieved once it is fixed to or expressed or expressible in the unit of money, making it commensurable with existing financial metrics and concerns. At this stage,

climate risk construction often becomes an act of negation: Investment managers consider climate risk as negligible compared to other, more urgent or better understood risks, Christophers (2019) reports, and central banks find only minor and manageable risks to the financial system and their supervised entities in their climate scenario exercises (see e.g., ACPR 2021; Bank of England 2022). Thus, the final step of attaching selective representations of the planet's climate to finance's existing calculative valuation infrastructure currently renders climate risk, and hence the climate crisis, at best manageable and at worst irrelevant; either way, this approach in its current form does not suggest a need for the structural transformations of socioeconomic and socioecological relations that by now seem to be urgently needed in order to stabilize the planet's climate within this century.

This does not mean, however, that economic sociologists should prematurely condemn and disengage from the construction of climate risk as a representation of the climate crisis. As emphasized above, climate risk is still in the making. For instance, concerns about their legitimacy compels central bankers to respond to criticism put forward against their climate scenarios. Thus, the latest update to these scenarios contains a new approach to calculating the costs of physical climate impacts that results in an up to threefold increase in modeled risk exposures (NGFS 2024). An effect of this latest change highlights a perhaps even more important reason why economic sociologists should remain engaged with climate risk construction: Certain countries, namely hot and arid ones, are found in the newest iteration of the NGFS scenarios to be particularly exposed to physical climate risks. Thus, while on an aggregate level central banks and portfolio managers in the Global North might be able to dismiss climate risks as negligible, there are the first signs that the majority world is already experiencing rising capital costs due to climate risk construction (Buhr et al. 2018; Kling et al. 2021). Identifying and exposing the (re-)production of such inequalities should be a key concern for economic sociology.

Apart from tracing these and other socio-material attachments and detachments of climate risk construction and the inequalities they produce, economic sociologists are particularly well equipped to interrogate another, perhaps less tangible dimension of central banks' approach to the climate crisis. Climate risk construction is embedded not only in the pre-existing calculative infrastructure of technoscientific capitalism but also in distinct capitalist temporalities. The growing attention in economic sociology to the temporal conditions of economic activity and capitalist reproduction (see e.g., Adkins, Bryant, and Konings 2023; Beckert 2016; Suckert 2022; Tellmann 2020), if guided to the research object of climate risk construction, can further advance our understanding of its pathologies and potentials.

For instance, the fast-paced and fluid temporalities of finance escape the temporally coarse, long-term representations of climatic change that climate sciences provide us with and that often form the basis for climate-related concerns in politics and civil society. Hence, central banks are starting to shift their attention from the long to the short term, best illustrated by their work on scenario analysis. The NGFS has ceased to develop new long-term scenarios (with time horizons until the end of the century) and will only update existing ones every other year while developing a new suite of short-term scenarios (with time horizons of just a few years better matching the concept of the "business cycle") to be released later this year. In other words, central bankers' calculative devices might start to reproduce rather than challenge the short-termism that Bear (2016) identifies as a key characteristic of capitalist techniques of time and that leaves many earth system dynamics out of sight. In the context of central banks' (dis-)entanglements with the planet's climate, focusing on the financial temporalities of climate as produced with devices is thus a fruitful entry point for an ecologized approach to temporalities in economic sociology, as Ute Tellmann developed in the previous issue.

Bringing further work by Bear (2020) into conversation with the concept of fictional expectations developed by Beckert (2016) points to another line of inquiry: The speculative nature of capitalism and the resulting need for an open future, or a multiplicity of futures, might be at odds with the need to narrow visions of the future in order to effectively coordinate expectations and behavior in markets towards a defined outcome. In the context of climate risk, the initial narrative that prompted the involvement of central bankers in the first place relied on the depiction of a singular future – a sudden devaluation of fossil fuel companies or the bursting of a so-called carbon bubble once policies to strictly limit carbon emissions were implemented (Carbon Tracker Initiative 2011). By now, this singular future of climate risk, which primarily left fossil fuel companies at risk, has been multiplied into a wide spectrum of possible futures both with and without effective climate change mitigation (e.g., through the NGFS scenarios), hence giving rise to very different risk class configurations, such as putting the global majority world rather than fossil majors at risk (see Beck 2016), as hinted at above. Beyond distributional implications, effects of this multiplication of climate futures on agency – for example, the ability to justify or the creation of fictional expecta-

tions regarding effective climate change mitigation efforts – constitute another crucial analytical dimension that must be illuminated in order to fully understand the pathologies and potentials of central banks' approach to the climate crisis. It seems plausible to assume, however, that the opening up of financial climate futures to scenarios beyond effective climate change mitigation pathways creates, at the very least, uncertainties within finance that could hamper collective behavior in anticipation of the rapid phasing-out of carbon-intensive economic activity.

Transformative potentials of climate risk

However, the dynamics set in motion by the (dis-)entanglements and the fitting to existing qualculative infrastructures described above are not captured fully by this interpretation of a reproduction of financial capitalism and its hierarchies. In fact, there are signs of transformative or at least reformative potential on three levels of the unfolding climate risk construction process.

First, the actual content of what climate risk is, the boundaries of its frame, are still contested and – in some instances – moving to become more inclusive of less financialized modes of valuation. For instance, the EU's disclosure regulation prominently went beyond the single materiality framing proposed by the TCFD but instead included risks posed by corporate activity to the planet's climate. Similarly, continuous critique of the NGFS scenarios' representation of physical risks (e.g., regarding their neglect of earth system tipping points) has guided central bankers' attention (Trust et al. 2023). The change in physical risk calculation during the last update of the scenarios as mentioned above suggests that significant changes to the calculative representation of climatic dynamics are not an impossibility.

Second, the actors involved in the construction of climate risk are not those that have been dominating financial market governance over the past decades. Not only have central banks created a new entity – the NGFS – but they set it up to compete with the existing regime of G20 forums, the BCBS, the FSB, etc., as an act of circumventing the hegemony of the United States and its opposition to any form of climate-related action (Helleiner, DiLeo, and van 't Klooster 2024). The broad membership of the NGFS and the opportunity for central banks from the majority world, such as Mexico or Chile, to actively shape the collective effort of developing an approach to the escalating climate and ecological crisis poses the question of whether different actor constellations might not, over time, lead to different outcomes, i.e., different (dis-)entanglements of central banks with the planet's climate. After all, as Hébert (2016) has shown in the context of environmental risk assessments of mining projects in Canada, even where technoscientific hegemony prevails, opening up the process of risk construction to a wider set of actors can allow different politics to emerge. Central banks outside the Global North have for decades pursued a far more interventionist and directive approach to financial markets, such as actively pursuing industrial policy, thus continuing what used to be the norm in continental Europe, for example, until the middle of the 20th century (see e.g., Epstein 2013). Equally, the exposure of their jurisdictions to extreme weather events as well as to the effects of chronic climate-related stress creates very different conditions for the (dis-)entanglement of central bankers and the planet's climate. In other words, the heterogeneity of central banks and their embeddedness should not be underestimated as a source of contention with regards to climate risk.

Last, the epistemic foundations of central banks' technoscientific capitalist modus operandi are changing in the context of climate risk. The ECB's climate change center created in 2021 has been hiring engineers, not only economists, and the NGFS long-term scenarios have been developed by a research consortium including hydrologists, energy system modelers, catastrophe modelers, and climate scientists. As outlined above, these new bodies of knowledge can come with their own problematic disentanglements and inscribed inequalities. However, they also have the potential to transform the sensemaking of central bankers and the salience they ascribe to climate mitigation efforts, for example. Both Deyris (2023, 723) and Helleiner, DiLeo, and van 't Klooster (2024, 13), for instance, observe that central bankers become "converted" in their attitude towards the planet's climate once they engage with the primary forum in which this new epistemic foundation is being forged – the NGFS. Some central bankers now consider financial and climate stability as "interdependent public goods" (Bolton et al. 2020, 66), for instance. Stretching central bankers' time horizon through the NGFS long-term scenarios – even if this achievement is currently being challenged as mentioned above – is another indication of the potential of these new bodies of knowledge to transform not only attitudes but also the calculative devices pivotal to how central banks exert their power.

Taken together, these dynamics point to the possibility of a meaningful diversification of voices and values shaping central banks' risk-based approach to the climate crisis. Thus, economic sociology needs to shed further light on these processes, perhaps with

particular attention to the "periphery" of global finance where novel perspectives and dissenting voices could be found. This can include academics on the fringes of central banks theorizing finance-climate relations differently; central banks in the global majority world, for example, emancipating themselves from the singular European focus on climate and carbon and exploring finance-nature relations more broadly; or actors at Europe's own periphery, such as the Hungarian central bank, which – in contrast to its government – has implemented a plethora of under-researched "green" central banking policies, ranging from preferential haircuts in its collateral framework to "greening" its capital requirements and a Green Home Programme to incentivize the purchase of energy-efficient homes.

"Green" central banking as unsettled and unsettling

These observations, I argue, leave us with an ambiguous assessment of the role of central banks in the climate crisis as both unsettled and unsettling. Large parts of what constitutes climate-related or "green" central banking is still emergent and contested, actor configurations are shifting, and the introduction of climate-related knowledge into central banker circles has developed a dynamic of its own. It has led, for instance, to spillovers that transcend the initial risk-based approach, as initiatives to green monetary policy or to support the EU's climate transition policies in the context of the ECB's secondary mandate show (Deyris 2023). This unsettled state of green central banking currently resembles a technoscientific rather than a market-based capitalist approach to framing and valuing the planet's climate. The heightened relevance of epistemic authority and inequalities that this implies for shaping what green central banking is also constitutes an opportunity for economic sociology. Not only are economic sociologists conceptually and methodologically well equipped to trace in vivo the socio-material relations spanning science, bureaucracy, and markets that produce climate risk; they can also take advantage of this unsettled state of epistemic orthodoxy in central banking and join ecological economists and environmental scientists, for example, in challenging and shaping the knowledge politics underpinning green central banking.

Still, the risk-based approach to the climate crisis pursued by central banks remains unsettling from the perspective of an ecologized economic sociology, as it suggests some degree of fitness of existing organizational structures and mandates, established qualculative frameworks and devices, and dominant epistemic frames for the context of the climate and ecological emergency. Assuming such a fitness of the status quo – of what is – in part threatens to consequently (re-)produce inequalities and (dis-)entanglements such as rendering the majority world as being at heightened risk. Furthermore, such normalization of engagement with the climate crisis within the narrow realm of the current modus operandi might render alternative approaches less legitimate, relevant, or needed. In other words, the *what is* might eclipse the *what if* as it postures as equipped to contain the climate crisis as climate risk – just one risk among many that central banks have supposedly learned to manage.

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