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Pluralist economics in an era of polycrisis

Editorial

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Abstract

Interacting crises at economic, societal, ecological, and geopolitical levels reveal the fragility of connected global systems and give momentum to pluralist economic thinking as a suitable approach to address the complexity and uncertainty of today's economy. This special issue (SI) explores how young economists, educated in this era, study economic phenomena through pluralist lenses. Due to the structure of interdependent crises and inherent uncertainty, pluralism of values, theory and methods may benefit the academic and policy debate on solutions for today's political, social, and scientific challenges. Applied to the crisis context, this SI shows a range of research methods and interdisciplinary approaches, reflecting a shift in economic thinking that embraces the complexity, limited predictability, and fragility of socioeconomic systems. The SI aims to promote a dialogue across schools of economic thought to enhance our understanding and contribute to robust and inclusive policy.

Keywords Polycrisis · Pluralism · Crisis · Overlapping emergencies · Economic methodology

JEL Classification A11 · B41 · B5 · H12

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1 Introduction

The Global Financial Crisis (GFC) was a wake-up call, revealing the cascading vulnerability of globally interconnected systems and challenging widely held beliefs in ever-increasing efficiency gains (Colander et al. 2009; Shiller 2010). Crises are turning points, and as such the GFC can be seen as a turning point in economics, reflected in the surge of political, philanthropic and academic initiatives calling for new economic thinking (Turrell 2016; Gräbner and Strunk 2020; Mearman et al. 2023; OECD 2019), acknowledging that pluralist perspectives help detect upcoming crises and instabilities early. For example, Hyman Minsky and others warned about the financial fragility and contagion channels that led to the GFC. Yet, these voices remained marginalised until the “*Minsky moment*” in economics (Vercelli 2011). The GFC was much more than an economic crisis — it was also a crisis of economic thinking.

In the early 21st century, simultaneous multiple crises have become a new normal — and with them, a generation of young economists has come of age in this socially, economically, ecologically and epistemically fragile environment. This Special Issue (SI) is a collection of some of their research, showing what pluralist perspectives can contribute to economics in an unstable world: diverse approaches complementing and challenging each other constitute a core element of pluralism.

Crises may be called a signature property of capitalist societies (Hoyer et al. 2023). But the scope, quantity, and interconnectedness of the emergencies in the early 21st century appear to mark a qualitatively new era, a “*polycrisis*” (Lawrence et al. 2022). The term was re-introduced by Tooze (2021) into the current debate,¹ and was prominently taken up by high-level political and economic decision-makers to characterise the environment they are trying to navigate through (EC 2016; Orouke 2023; Summers 2022; WEF 2023). A polycrisis can be defined as a “*cluster of related global risks with compounding effects, such that the overall impact exceeds the sum of each part*” (WEF 2023).²

This has implications for economics: complex interdependencies and non-linearities are difficult, if not impossible, to capture by marginalist, quantitative approaches that aim to provide precise, deterministic and — ideally — causal inference (Colander et al. 2009). The period since the early 2000s has been characterised by lurches from one crisis to another, and ongoing large-scale technological changes related to digitalisation, artificial intelligence, and the climate-technology transition are driving the economy into a state that is far from equilibrium (WEF 2023). The new era is inherently uncertain, and small changes can push the system into a qualitatively radically different state, making predictions almost impossible (Heinrich 2018; Arthur 2021).

Debates on complexity have a long tradition in heterodox economics under the umbrella of “*complexity science*” (Elsner 2017, 2023). Yet, the application of these

¹ The term was first used by Morin and Kern (1999) to describe the complexity of interwoven crises affecting humanity.

² Sect. 3 discusses the concept of *polycrisis* in detail. We adopt the technical definition of the World Economic Forum (WEF). The WEF is not uncontroversial and is sometimes considered an institution of authoritarian neoliberalism. However, their work on global risk mapping since the early 2000s can be seen as a good example of how the awareness of fragility moved up in the agenda of high-level decision-makers.

methods was often hindered by the limited availability of large-scale (micro)data and computational power required to capture the complex patterns of adaptive interaction. The new era has brought a wide range of new methods, computational methods and power, data, approaches to communication and exchange, and, not to forget, *awareness*, which are shaping the toolbox and mindset of young economists.

Uncertain times require scientists to be pragmatic in Boltanski's (2011, p 24) sense, and to develop agile and adaptive theoretical and methodological research designs. Their selection and development should be guided by the explananda and be flexible in dealing with the unforeseen by drawing on different tools and perspectives. Pluralist economics can offer these qualities: given the high-dimensional and non-linear nature of the polycrisis, it seems unlikely that any single school of thought, trimmed for efficiency within a narrow set of theories, methods and assessment criteria, can adequately capture the complexity and derive policy implications for the challenges ahead. Pluralism embraces diversity and openness, being ready to constantly question beliefs, and welcoming complementary and contrasting methods and views. This contributes to a holistic understanding of (economic) phenomena.

Pluralist research comes with costs and challenges, as wide openness may hamper scientific quality and communication (Gräbner and Strunk 2020). However, pluralism — in our understanding — is far from “*anything goes*”, but the rejection of any pre-commitment to a specific method, theoretical stance, or set of assumptions for extra-scientific reasons. Instead, pluralism is the equal appreciation of a wide range of methods and theories, which — of course — may each be based on a narrow set of assumptions. Individual contributions are judged by their potential to solve a particular research question and shed light on empirical phenomena.

Contradicting conclusions derived from different methodologies, theories, and data do not necessarily indicate lacking quality or consensus; instead, contradictions can serve as starting points to develop a deeper understanding of the reasons for contradiction. Meanwhile, heterogeneous approaches yielding consistent results provide confidence in the robustness of the findings in a complex and uncertain world. Interacting crises may render the validity of specific assumptions and results founded on a wide range of perspectives can be more robust under volatile circumstances.

In this SI, we adopt a positive concept of pluralism and do not seek to draw a demarcation line between pluralist and non-pluralist economics or to defend a specific epistemic stance. There are different degrees of pluralism (Gräbner and Strunk 2020), and often, terms like “*heterodox*” or “*pluralist*” are used by some economists to label themselves (Guizzo 2024; Mearman et al. 2023). We leave it up to the reader and do not engage in a meta-discussion about pluralist economics and refer the reader to existing discussions in the literature (e.g. Dutt 2014).

Instead, this SI discusses what pluralist thinking can contribute to economics in an era of polycrisis. It showcases examples of academic output produced by young economists whose economic education and socialisation were shaped by a crisis environment. This constructive pluralism is, in our view, embodied in the broader vision of the *Review of Evolutionary Political Economy* (Cincotti et al. 2020), and we hope to contribute to this project by focusing on the views of young scholars in a polycrisis context. The SI also aims to shed light on the multitude of new (and old) research

methods available today and on the increasing appreciation of interdisciplinarity. It seeks to illustrate how theoretical and methodological diversity can deliver distinct, but complementary perspectives and solutions to the challenges ahead.

The remainder of this editorial is structured as follows: Sect. 2 reviews recent developments in economics since the GFC. In Sect. 3, we review the role of pluralism in the face of the polycrisis. Section 4 provides an overview of the papers in this SI. Section 5 offers a reflection and Sect. 6 concludes.

2 Pluralist economics in the 21st century

Crises have often been productive for the intellectual development of economics by revealing the limitations of existing approaches and allowing room for new ideas, methods, and theories to be developed and tested. Examples include the Keynesian revolution in the aftermath of the Great Depression, systematic national statistics and measurement after World War II, monetarism and rational expectations during a period of stagflation and oil price shocks, the rise and abandonment of the Washington consensus in the face of public debt crises and development failures or, more recently the increased attention for Minskyan perspectives after the Asian and global financial crises and for planetary boundaries in the face of climate change (Aigner et al. 2018; Christodoulakis 2015; Galbraith 2013; Marangos 2009).

The GFC gave momentum to pluralist economic initiatives, leading to increased interest from high-level institutions (Turrell 2016; OECD 2019) and leading economic thinkers (Aigner et al. 2018; Colander et al. 2009; Galbraith 2013; Guizzo 2024; Mearman et al. 2023). It was also accompanied by a large influx of public and private research funding and various student initiatives calling for a more pluralist economics education (Aigner et al. 2018; Shiller 2010). The “*academic outputs*” of these grassroots movements and high-level institutional changes are becoming increasingly visible, some of which are presented in this SI.

Since the GFC, several central banks and international financial institutions have reviewed their economic modelling portfolios. Some have added heterogeneous agent models to their macroeconomic toolbox, including New Keynesian and agent-based models (ABMs), and are exploring how new methodologies can improve their understanding of the economy and macroeconomic decision-making (Axtell and Farmer 2022; Turrell 2016; Hommes et al. 2022; Kaplan et al. 2018; Dawid and Delli Gatti 2018). New approaches also include new and significantly improved data, in real-time and high granularity, and novel processing tools, facilitated by technological advances in computational processing (Buono et al. 2017; ONS 2023; Reimann 2024; Richardson et al. 2021). Central banks and leading economic research institutions have also broadened the range of issues considered as relevant dimensions of the economy, now seeking reliable approaches to incorporate climate risks, supply chain disruptions, financial stability, and distributional aspects into their decision-making processes (Alogoskoufis et al. 2021; Gordon and Clark 2023; Wischnewsky et al. 2021).

Parallel crisis accounts to this new economic thinking exist in other fields such as international political economy (Blyth 2014; Gill 2017), cultural theory (Bruff and Horn 2012; Jessop 2015), economic geography (Christophers 2020; Engelen 2011) and sociology (MacKenzie 2011; Miró 2021). These accounts often emphasise the impact of narratives, perceptions, institutions and power relations in shaping, for example, policy responses, which are difficult to integrate into quantitative economic models based on well-defined rules of constrained optimisation or behavioural heuristics. For example, the question of why austerity was a dominant policy strategy in the aftermath of the GFC and the European sovereign debt crisis may not be well answered by model-centred economic explanations, even though it is an inherently economic question.

Engagement with other disciplines equipped to deal with these issues is thus crucial for a pluralist and holistic understanding of the polycrisis. In this SI, we explicitly invited and included several papers from adjacent fields such as sociology and economic history and aimed to include referees from these adjacent fields, where appropriate.³

High-level institutional change is slow, tempered by concerns about taking responsibility for prematurely adopting methodological innovations. Adopting novelty is hampered by communication challenges, harmonisation, standardisation and data collection. A good example is the “*Beyond GDP*” debate in search of a new welfare measure. The development of more inclusive welfare indicators traces back to a long history, including debates about social and ecological dimensions (Elsner 1983), and feminist perspectives (Beneria 1992) not being deflected in national accounts (Zuazu-Bermejo 2024).

In public discourse, these issues gained renewed traction through the work of the “*Stiglitz-Sen-Fitoussi Commission*” initiated by Nicolas Sarkozy in 2008 (Hoekstra 2019; OECD 2019). Since then, the academic debate has broadened among pluralist economists, who have been calling for a redefinition of social welfare for decades, and those who do not want to use the label “*pluralist*” for themselves (Engler et al. 2024). This includes widening the issues now seen as inherent to economic thinking, notably those surrounding inequality and the climate crisis.

However, the adoption of alternative welfare measures has been slow, and GDP is still a dominant indicator for communicating and modelling the state of the economy. Promising initiatives are underway, but measurement and modelling will remain a research challenge, especially when the flow of incoming information requires constant updating. One example of emerging topics to be integrated into economic metrics is biodiversity, which has long been neglected, not least because its importance is still not fully understood and even harder to quantify (Bartkowski et al. 2015; Dasgupta 2021).

Diversity and inclusion are other examples of evolving societal norms that require continuous revision of the metrics that are considered socially and economically relevant (Zuazu-Bermejo 2024). While continuous revision is desirable, the process poses

³ This interdisciplinary dialogue might also be helpful in another way: Since scientific development is slow in adaptation even to major events like the GFC, mutual learning from the strategies in adjacent fields to challenge old methodological approaches may benefit the pluralist project as a whole (Bruff and Horn 2012).

a challenge to quantitative modellers, who often rely on historical data to perform research and assess model performance. GDP is convenient to use, not least because of its availability, high level of standardisation and ease of communication. Yet, single indicators and models are limited in capturing economic complexity. However, communicating different, possibly conflicting perspectives and indicators to policymakers with limited time can be challenging.

Pluralistic education and awareness programmes can facilitate communication and understanding of the complexity and uncertainty inherent in quantitative indicators, not only among decision-makers but also in the public debate (Grisold 2023; Ciccotosto et al. 2024). Uncertainty communication and quantification has become a field of research in its own right (Hansson 2022; Van Der Bles et al. 2019), increasingly adopted by statistical offices in their communication strategy (OSR 2023).

Along with the growing pluralism in quantitative economics, qualitative approaches have attracted increasing interest, but are used somewhat limited in scope (Lenger 2019). For example, mixed methods have become popular in economic experiments in development economics, innovation studies, and research aimed at understanding empirical controversies (Starr 2014). However, their use and recognition across all fields of economics are somewhat limited, despite their ability to provide relevant insights (Grötsch 2024; Porak and Reinke 2024; Schairer 2024).

Moreover, various exercises in applied statistics using big data and/or advanced quantitative modelling show that outperforming expert judgements is difficult and often fails (Jansen et al. 2016). Experts base their expectations on intuition and qualitative judgements, drawing on various data sources, including hard numbers but also information that may be beyond the scope of any quantitative model. Wilber and Harrison (1978) argue how evolutionary-institutional economics, using a combination of quantitative and qualitative methods, deal with situations in which several causal factors interact. Acknowledging the covering law account by Hempel and Oppenheim (1948), quantitative approaches tend to be more suitable in situations with few, well-understood laws. Meanwhile, qualitative methods may be particularly relevant in circumstances of high uncertainty (Mousavi and Gigerenzer 2017).

Various other developments happened in economics since the GFC, and this brief review does not claim to be comprehensive. However, it suggests tendencies of convergence between pluralist/heterodox and mainstream/orthodox approaches in various subfields of economics. This is not to say that the distinction between, for example, approaches focusing on constrained optimisation and equilibria compared to heuristics-based models of behavioural adaptation does not persist. Rather, the debates in traditionally interdisciplinary fields like economic geography or behavioural economics tend to be orthogonal to the usual divides in economics (Dobusch and Kapeller 2012).

Nevertheless, with few exceptions (Poledna et al. 2023), economic articles using methods such as ABM or qualitative research still rarely find their way into top-ranked economics journals (Aigner et al. 2018), which is a barrier for young economists in the academic job market. Tenure committees often rely on quantitative journal rankings, which could, in theory, provide a means of comparing the quality of research. Yet, in practice, they usually add to the exclusion of pluralist thought from the economics

discourse (Corsi et al. 2018). The dominance of a narrow set of top journals in economics contributes to a situation where editorial boards of few journals have discursive power over the constitution of economics, thereby narrowing the scope of the field and its potential to integrate more diverse perspectives (Heckman and Moktan 2020). As Boltanski (2011, p 51) argues, pluralist economics movements need to consider the reaction of established institutions, without relying on similarly exclusive practices.

In the past, the main strength of heterodox schools was their openness to research on neglected topics that might become relevant in unprecedented circumstances. Today, it is widely accepted that climate change, financial stability, inequality and technological change are the key areas for economic research in the 21st century, and pluralist economics has already made significant contributions to these topics decades ago. In times of a polycrisis, other issues may arise that require radically different economic thinking.

The intellectual openness and diversity of pluralism are among its greatest strengths in the years to come. Consequently, we characterise pluralism today neither as one specific methodological approach or epistemological conceptualisation nor as the a priori ideological exclusion of any such approach or conceptualisation. Instead, pluralism means inclusiveness and a quest for fruitful (dis)agreement. This is only a precondition and foundation, rather than a complete and operational set of quality criteria to demarcate scientific approaches, for which we recommend the ongoing debates in the philosophy of economics (Boumans and Davis 2015; Elster 2008; Fumagalli 2015; Hausman 2009; Lupovici 2009; MacKenzie 2011; Rosenberg 2009).

3 Rising benefits of pluralism in the polycrisis

The cases made for the benefits of pluralistic approaches are often not specific to economics (Ludwig 2016) nor new to the polycrisis (Neurath 1935; Cartwright 2006).⁴ Their key arguments can be summarised as follows (Cartwright et al. 1996; Hacking 2012; Ruphy 2011): Looking at empirical phenomena from different perspectives and methodologies leads to more robust and comprehensive policy solutions that better address the needs of society. Such a diversity of approaches enriches academic research and education, preparing students to tackle real-world challenges with a broader set of analytical skills.⁵

⁴ In fact, one may recognise phenomenological perspectives here, especially Plessner (1981, p 181) who understands social phenomena as entities “*that cannot be pinned down exactly and yet can be grasped, i.e. that can always be seen anew because it represents a reality of life that constantly changes and becomes visible from different angles.*” (own translation from German: “*(...) eine nie ausschöpfbare und doch faßliche, d.h. immer neu zu sehende, weil beständig sich in anderem Sinne erneuernde Lebenswirklichkeit in den Blick zu bekommen*”). For Plessner, such constant shift constitutes the open nature of questions of social sciences (Grene 1966); yet, he proposes the integration of natural and social sciences (and humanities) rather than sharp distinctions between them. Note also that constant changes and interactions are a signature feature of the polycrisis, which links this phenomenological perspective closely to the increased benefits of pluralism, as argued below.

⁵ There is an exception if the variety of distinct approaches grows too big; this can indicate a lack of willingness to integrate similar ones (Hegselmann and Krause 2002), resulting in a segregated plurality rather than genuine pluralism.

However, pluralism comes at a cost: increasing epistemological diversity makes it more difficult for different schools of thought to communicate using field-specific language or jargon. In extreme cases, this can lead to the “*problem of inconsistent models*” (Morrison 2011, 2015). Relatedly, models in catastrophe theory show how cooperation can endogenously collapse even in apparently successful systems. As Cordes et al. (2021) argue, there may be cognitive limits to cooperation and dialogue between schools of thought. Successful pluralistic collaboration could fail if it is too successful, and the number of perspectives involved becomes too large if the cognitive capacity does not evolve proportionately. The risk of such endogenous collapse is part of the cost of pluralism.

Moreover, the risk of pseudoscientific arguments entering academic discourse increases as it becomes more difficult to apply (often field-specific) quality criteria (Gräbner and Strunk 2020). The more perspectives, schools of thought and disciplines involved, the more costly it is to work towards a common understanding, as reflected in the cost curve of increasing pluralism shown in Fig. 1a, which outlines a stylised model of the costs and benefits of pluralism.⁶

Based on similar considerations, Gräbner and Strunk (2020) introduced what we call a “*pluralism Laffer curve*” (Fig. 1b). An optimal level of pluralism lies somewhere between the extremes of zero and maximum diversity. At these extremes, the benefits of diversity are absent, either because there is no diversity, or because the scientific landscape is so disparate that cross-fertilisation between schools of thought is impossible. In intermediate cases, the benefits of pluralism increase, as a wider range of methods and theories increases the likelihood that they will be appropriate for solving a problem.

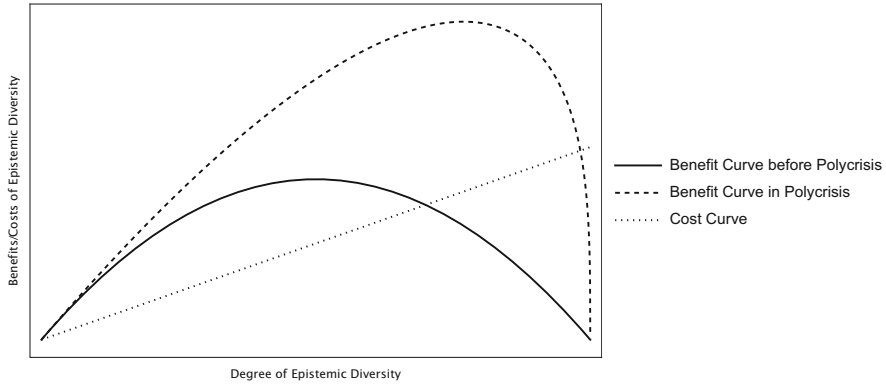
We argue that the polycrisis is likely to increase the net benefits of the diversity of approaches, as reflected in an upward shift of the stylised curve in Fig. 1a. The costs of pluralism remain unaffected by the polycrisis, as they depend mainly on arrangements within scientific institutions and are not affected by research questions specific to the polycrisis.⁷ At the same time, the benefits will increase for a number of reasons. Here we describe in detail the three — in our view — most important.

Firstly, the polycrisis is characterised by multiple interacting subcrises in different systems that cannot be understood in isolation (Lawrence et al. 2022). Consequently, the study of a given phenomenon must be integrated with adjacent research, as has been noted for other fields (Hoyer et al. 2023; Klein et al. 2023; Koasidis et al. 2023). Hence, pluralist approaches that adapt methods from other disciplines, including social and life sciences, can also aid in contextualising and translating insights from economics to and from these research fields.⁸ The interdependencies between the economic, social, financial, political and environmental spheres have partly found their way into economic thinking and decision-making (WEF 2023). Thereby, the interdisciplinary

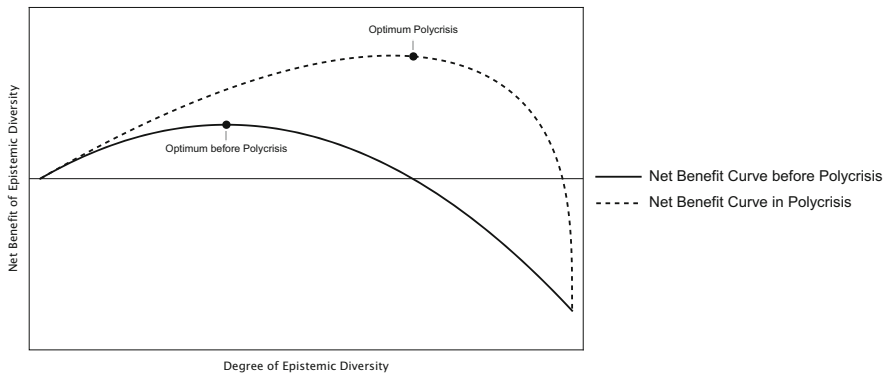
⁶ The idea does not require the cost increase to be linear. We make this assumption for reasons of simplification.

⁷ It could be argued that normatively questionable agendas are more likely to emerge in a crisis-ridden political and social environment. However, we expect such questionable agendas to be the result of a very high degree of pluralism, at a very high cost.

⁸ For example, Mäki (2021) shows what economists can learn for their understanding of the role of money from the framing of money in other disciplines.



(a) Benefits and costs of epistemic pluralism before and during the polycrisis.



(b) Net benefits of epistemic pluralism before and during the polycrisis.

Fig. 1 Stylised representation of the costs and benefits of pluralism, adapted from Gräbner and Strunk (2020)

exchange that is inherent in pluralism is especially valuable in studying a polycrisis that cuts across multiple disciplines (Lawrence et al. 2024): One cannot assume adjacent systems studied by other disciplines to remain constant or treat events in these systems as external shocks because they react to changes in the economic sphere and simultaneously influence them.

Secondly, epistemic diversity can be beneficial as phenomena are examined from different perspectives. Pluralist economics offers a range of tools for better understanding the dynamic, crisis-prone, and disequilibrium nature of socioeconomic systems, the role of institutions, networked interaction, heterogeneity and norms for macroeconomic outcomes, which are critical features of our economy (Arthur 2021). By fully recognising the complexity of economic systems and the multiplicity of factors influencing them, pluralism encourages open debate, critical thinking and innovation. While these benefits of epistemic diversity are not necessarily novel, the need to reap them is vital in the polycrisis: Owing to the time pressure brought by the interacting and partially mutually reinforcing crisis elements, it may be advisable to try different

solution approaches not sequentially but in parallel. Pluralist economics is uniquely suited to do so.

Thirdly, the polycrisis characterised by deep uncertainty. The uncertainty is not only an integral part of any research agenda in this context but also of the methods and evaluation criteria. While methodological rigour and well-defined criteria are requirements of high-quality research in more predictable environments, the uncertainty questions the adequacy of uniform, predetermined standards and demands a flexible, adaptive approach that does not hide potential conflicts, controversies, and contradictions across different tools, assumptions, and data sources.

Boettke et al. (2014) make a strong case for highlighting controversies and paths not taken in the history of economics: If the market of ideas in economics is not fully efficient it may fail to select for the most appropriate theoretical or methodological approaches to address a particular question.⁹ This adverse selection is likely exacerbated during periods of crisis when the economics toolkit and its quality criteria developed before the respective crisis have not yet been adopted.

Per construction, pluralist research lacks uniform standards, which is often seen as a disadvantage. However, in uncertain times, controversies about adequate standards may also be seen as useful contributions to the scientific discourse if they help reveal the sensitivity of research outcomes to subjective judgements embodied in the choice of a method. This can help quantify and evaluate levels of uncertainty associated with particular research results.

As outlined above, these increased benefits of pluralism without changing the cost curve in the polycrisis imply an increase in the marginal net benefits of pluralism for any degree of pluralism. Consequently, the current polycrisis may shift the trade-off between diversity and the ease of collaboration towards higher optimal levels of diversity compared to a stable, non-crisis situation. Even if the degree of pluralism may have been at the desired level before the polycrisis, as prominently argued (Bachmann 2019), the new optimum would exceed it.

Probably partially owing to this upwardly shifting levels of desirable plurality, there are signs of synergies between various schools of economic thought, as mentioned above. For example, state-of-the-art neoclassical models now feature agent heterogeneity (Kaplan et al. 2018), while ABMs increasingly build on empirical foundations that enable economic forecasting (Dawid and Delli Gatti 2018; Poledna et al. 2023). The rising availability of large-scale data and computational capacities shift the technical feasibility frontiers in all subfields of economics and enable researchers to address a broader range of questions with novel methodological approaches and rich data (Bokányi et al. 2023; ONS 2023; Pichler et al. 2023). This may facilitate the scientific exchange between these fields and help overcome the juxtaposition between so-called ortho- and heterodox approaches.

So far, most of this convergence has been limited to quantitative economic research, despite the significant potential of qualitative methods to deliver relevant insights and

⁹ This includes specific methodological approaches that cannot illuminate its relevant empirical target system. One example might be representative agent models dominant in macroeconomics until at least the 2010s that could, by construction, not capture coordination failures like unemployment, even though alternative models with agent heterogeneity had existed already for decades (Kirman 1992).

understanding in research areas characterised by uncertainty, novelty, and empirical controversies (Lenger 2019; Porak and Reinke 2024; Starr 2014; Wilber and Harrison 1978). In a productive pluralism, one should not enforce a choice between methods but understand their coexistence and dialogue as a fortunate cross-fertilisation. The characteristics of the polycrisis explored in this section underline this, as they do not favour any specific school of thought but require the research community to draw from different ones in parallel.

4 The special issue

This SI shows examples of methodologically diverse approaches and illustrates what pluralism can contribute to economics in an era of polycrisis. The six papers included within this SI resulted from a competitive selection process. The guest editors first screened the initial abstract submissions with the aid of the editorial board of REPE and invited the authors of the selected abstracts to submit a full paper. The goal of the selection process was threefold: (i) demonstrate the potency of the specific chosen theory and method to deliver economic insights, (ii) highlight the conceptual connection between polycrisis and the paper, and (iii) use similar language and concepts in each contribution to foster dialogue across disciplines and schools of thought. After employing these general scientific quality criteria, the papers underwent a usual double-blind peer review process with pre-contacted reviewers, usually one academically senior and one junior, to balance experience and field-specific knowledge of current methods and debates. In the following, we summarise and briefly discuss the six selected papers.

Earlier in this editorial, we discussed the benefits of pluralism from a theoretical and conceptual perspective. But how do students perceive pluralism in economics? Does pluralism affect students' satisfaction and skill formation compared to more specialised programmes? How does pluralism in teaching help prepare students for the polycrisis? Ciccotosto et al. (2024) asked these questions empirically, conducting a survey among economics students in Italy and using an ordered logit model to investigate the relationships between levels of pluralism and student responses. The results confirm higher levels of overall satisfaction in more pluralist programmes. The authors do not identify any negative impact on skill formation, suggesting that the "costs" of pluralism (lack of clarity and ease of communication) (Gräbner and Strunk 2020) may not be present from a student perspective. Ciccotosto et al. (2024) further discuss several benefits of pluralist economics education in preparing the next generation of decision-makers to act in a complex, interconnected world.

From the student perspective, pluralism in this setting thus appears unambiguously positive. However, teachers and lecturers may face hurdles, given that existing syllabi and course modules are often based on standardised textbooks and time resources to prepare new material are limited. Yet, this situation may have changed, as several reference works on pluralist teaching have been developed over the past decade, allowing lecturers to build on them (Decker et al. 2019a,b). The results by Ciccotosto et al. (2024), together with these novel reference works, indicate that pluralist teaching can be a win-win situation for both students and teachers.

Navigating through the polycrisis can be facilitated if crises and their risks in any interconnected subsystems can be detected early. This helps take action in time, mitigate contagion, and strengthen resilience. Reimann (2024) addresses the challenge of crisis prediction in financial systems and compares the prediction performance of state-of-the-art logistic regression models to various machine learning (ML) models. The author finds that advanced ML models outperform the logistic regression approach in out-of-sample predictions, especially Random Forests and Extremely Randomised Trees. He further quantified accumulated local effects to inform policymakers about the key drivers of the underlying crisis dynamics. The results reveal non-linearities for several of the early warning indicators used in the predictions, highlighting the relative advantage of complex computational tools that can capture such relationships. Overall, the study may be seen as a positive signal, showing that the 21st century will not only be marked by the threats of the polycrisis but also by a surge of new methods and tools to cope with it.

This positive signal may be generalised as a call for extending the methodological toolkit, as a benefit of pluralism. In their contribution, Porak and Reinke (2024) make a similar claim and promote the increased use of qualitative methods to complement quantitative research. They show how existing qualitative approaches have already contributed to studying the polycrisis. Further, they provide an overview of promising qualitative methods and their applicability. This facilitates the ease of use among economists without a dedicated qualitative background and provides a baseline for mutual understanding within the discipline and in inter- and transdisciplinary contexts. For example, qualitative research helps integrate diverse stakeholder perspectives (Bracken et al. 2015).

Grötsch (2024) offers an example of applying mixed methods in economics. The author analysed factors contributing to the success and failure of textile manufacturers during a structural change process in the late 20th century in Germany. The analysis relies on data from statistics offices to quantitatively describe the firms in question and identify criteria for their (non-)survival. Where the data alone was insufficient to solve the research question, the author conducted qualitative interviews with key stakeholders from the firms. This combination of quantitative and qualitative methods sheds light on what constitutes success factors for individual actors in a crisis. Despite its focus on a historical crisis, several findings can be applied to the current polycrisis. Grötsch (2024) illustrates the value of historical cases as surrogate systems that, given the resemblance between the cases (Mäki 2009), can shed light on the mechanisms governing current or future economic phenomena in ways comparable to, for example, simulation studies.

Schairer (2024) thoroughly examines the aftermath of the 2008 GFC, focusing on the evolution of macro-financial regulatory frameworks and unconventional monetary policy as a novel thwarting mechanism in the tradition of Hyman Minsky (Dafermos et al. 2023). The paper shows how these thwarting mechanisms are designed to stabilise the system but often lead to unintended contradictions. Ultimately, Schairer (2024) argues that these contradictions impede economic growth in the post-crisis era, hindering efforts to restore stability in the macro-financial landscape. The paper adopts an evolutionary-institutional perspective and highlights the importance of institutional

details, often neglected in macro-financial modelling. For analysing the polycrisis, it would be necessary to consider both macro-financial linkages and feedback between the economy and policy decisions, which may have unintended outcomes.

Historically, crises often exacerbated existing inequalities. The adverse effects of the COVID-19 pandemic, for example, were heavily gendered and affected women to a much larger extent. While similar observations hold for many historical crises, the gender bias of the pandemic is arguably particularly strong, as the necessary mitigation measures such as school closures increased the “*double burden*” of women during the lockdowns (Hanzl and Rehm 2023). Zuazu-Bermejo (2024) emphasises the importance of feminist macroeconomics in integrating gender into macroeconomic frameworks, especially in light of the neglect of gender dynamics in mainstream and, to a lesser extent, heterodox macroeconomics. The paper reviews existing works comprehensively, identifying three primary strands: (1) feminist growth theory, (2) the care economy, and (3) intra-household allocation analysis. The paper outlines challenges facing the subfield, including methodological issues and tensions with dominant approaches to macroeconomics, while also considering incorporating feminist perspectives in macroeconomics education. The paper highlights the hidden care work of women and calls for a methodological shift in macroeconomic theory to accommodate the modelling of the care economy. It underscores the pandemic’s role in prompting a reassessment of austerity policies and their gendered implications. This indicates a growing momentum of gender-aware and feminist macroeconomics in addressing those contemporary challenges.

5 Discussion

This SI offers a platform for pluralist dialogue between different schools of thought within economics research to contrast and consolidate their views on the polycrisis and resolution attempts. As the contributions in this SI show, pluralism is not a fixed concept but a methodological approach that welcomes the diversity of perspectives to address an economic problem. Different degrees of pluralism (Gräbner and Strunk 2020) exist, and the most suitable level may vary across problems to be solved and their context. The contributions from different perspectives collected in this SI demonstrate that pluralism might be well-suited to tackle the challenges posed by a polycrisis and its interacting subcrises.

Collectively, the papers in the SI illuminate and discuss various feedback loops in the socio-economic system, associated policy (Porak and Reinke 2024), institutional design (Schairer 2024) and firm behaviour (Grötsch 2024), all endogenously adapting to crisis periods. The non-linear relationships between early warning indicators and financial crisis demonstrated in Reimann (2024) add to this picture. At the same time, the impact of these crises is strongly gendered, as Zuazu-Bermejo (2024) shows in her review of the literature on feminist macroeconomics. Thus, to understand our contemporary polycrisis, representative agent models operating in given environments and under fixed constraints may not be adequate, as nowadays widely acknowledged in the economics community (Cincotti et al. 2022; Kaplan et al. 2018).

Instead, a more comprehensive view of economic phenomena in general and periods of crisis, in particular, can be fruitful. The contributions in this SI study the economy at different levels of aggregation, from the micro-level behaviour of specific firms (Grötsch 2024) to macroeconomic outcomes such as financial crises (Reimann 2024). Some papers feature quantitative methods (Zuazu-Bermejo 2024; Reimann 2024), while others focus on qualitative ones (Grötsch 2024; Porak and Reinke 2024). Finally, they are based on very different schools of thought that include a Minskyan perspective in Schairer (2024), evolutionary economics in Grötsch (2024), materialist conceptions such as in Porak and Reinke (2024) and feminist macroeconomics in Zuazu-Bermejo (2024). Teaching such a plethora of schools of thought may be challenging. Yet, as Ciccotosto et al. (2024) showed, this worry is not supported empirically, and it can be facilitated by relating modern approaches such as complexity economics to themes from classical political economy in teaching (Weber and Schulz 2023) suggest. Consequently, this SI does not try to call for one specific approach. Instead, it should be understood as a reminder not to favour one or ex-ante disregard another.

6 Conclusion

This SI demonstrates the potential of pluralist approaches for research and teaching to address today's challenges instead of criticising established methods. However, this SI is by far not pluralistic in every dimension. For example, it is biased towards a European perspective, as reflected in the institutional affiliations and ethnicities of the authors. The bias towards Europe may be informative by itself, as it coincides with the over-representation of European authors, institutions, and research funding driving the academic debate on the polycrisis in the recent past (see Sect. 3). Still, it may be valuable to include non-Western perspectives in future studies of polycrisis, which may potentially already be discussed under alternative labels in other world regions. Also, the topical pluralism of the SI is limited. For example, it does not cover the ecological and climate crisis. We hope the papers in this SI are only the beginning of a series of economic research approaching the polycrisis and its subthemes from pluralist perspectives. The discussion of pluralism's added value for economics in an era of polycrisis can help to stipulate and guide such future contributions.

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