Finance and Society (2025), 1–21
doi:10.1017/fas.2025.7

CAMBRIDGE UNIVERSITY PRESS

ARTICLE

Redefining scientization: Central banks between science and politics

Aurélien Goutsmedt[1,2] and Francesco Sergi[3]

[1]F.R.S.-FNRS; ISPOLE, UCLouvain, Louvain-la-Neuve, Belgium, [2]ICHEC Brussels Management School, Brussels, Belgium and [3]LIPHA, Université Paris Est Créteil, France

Corresponding author: Aurélien Goutsmedt; Email: aurelien.goutsmedt@uclouvain.be

Abstract

This article introduces a new conceptual framework for examining the transformation of central banks' activities at the intersection of science and politics. It builds on the results of the contributions gathered in this special section on the scientization of central banking, to which this article also provides an introduction. We start with an analysis of Martin Marcussen's concept of 'scientization', originally formulated to describe the changes within central banks since the 2000s. After highlighting how Marcussen's concept has raised different interpretations, we broaden our scope to examine how 'scientization' is applied in the wider social sciences, extending beyond the study of central banks. This brings to the fore two ideas: scientization as 'boundary work' (redrawing the line between 'science' and 'non-science') happening both in the public-facing ('frontstage') and internal ('backstage') activities of organizations. Finally, we suggest how these two ideas can be used to reinterpret 'scientization' of central banks as the emergence of central banks as 'boundary organizations'. This reframing allows us to untangle and clarify the phenomena previously conflated under the original concept of scientization, offering a more coherent framework for ongoing research on central banks.

Keywords: boundary work; central banks; expertise; scientization

Introduction

The transformations undergone by central banks in the last decades have come under the lens of various literatures, documenting and characterizing these changes. In these literatures, the concept of 'scientization', proposed by Marcussen (2006; 2009; 2011) had enjoyed great popularity.

The 'scientization' of central banks designates, according to Marcussen, a historical trend towards the increasing reliance of central banks' policymaking on 'science', especially on 'science' produced within central banks.[1] Marcussen identifies 'scientization' as the salient characteristic of what he terms the 'fifth age of central banking': that is, a period, starting in the early 2000s, where 'central bankers gain legitimacy and authority by basing their views on and applying the language of science', marking a shift of power to 'those who master the discourse of science' (Marcussen, 2009: 377). The 'fifth age' signifies a further evolution with respect to the 'fourth age' (the 1990s), which was characterized by the 'depoliticization' of central banks, that is, their increasing independence from governmental influence. Following the scientization of central banks, monetary policy

transcends political and ideological realms, becoming a domain governed by scientific authority and expertise.[2]

Undeniably, Marcussen's characterization of central banks pinpoints key patterns in the historical evolution of their practices and the building of their political legitimacy. Scientization encompasses central banks' reliance on expert knowledge for internal operations and external communication, as well as their growing role in contributing to academic research (Claveau and Dion, 2018). This concept illustrates well the intersection of science and politics within central banks.

Marcussen was aware of some degree of 'oversimplification' in his analysis. He emphasized how his characterization of modern central banks relied on 'plausibility probes', for which further and detailed empirical research was needed (Marcussen, 2009: 373).[3] The contributions to this special section take Marcussen's invitation seriously. They trace the evolving historical relationship between science and politics within central banks, taking both a global perspective, differentiating the cases of Global South and Global North central banks (Dogan and Lebaron, 2025), and a national one, with two case studies: the Banque de France (Dutilleul, 2025) and the Bank of England (Goutsmedt et al., 2025). Together, they point out how central banks have engaged with science since the late-nineteenth century, for instance, through the establishment of data series and statistical practices (Dutilleul, 2025). They also highlight the influence of national institutional configurations and the role of central banks within national power structures. Without doubt, as Marcussen noted, the internationalization of economic knowledge (Fourcade, 2006) and central banks practices, through the formation of 'epistemic communities' (Haas, 1992), has been pivotal since the 1970s. However, this internationalization has prompted diverse responses and configurations, ranging from resistance to adaptation, depending on the national context (Morgan and Butter, 2003; Rancan, 2021; Rancan and Sergi, 2024: Chapter 1). A broader geographical perspective is also essential to avoid a Western-centric view on the history of central banks: the conception of the 'typical' central banker varies significantly between the Global North and the Global South (Dogan and Lebaron, 2025).

When engaging with Marcussen's work both at the empirical and at the conceptual level, it becomes evident that scientization raises multiple interpretations. This diversity underscores the importance of dissecting the concept, in this introduction, to clarify that it encompasses three distinct dimensions: first, scientization may be understood as the increasing reliance on expertise and scientific knowledge by central banks to achieve policy objectives; second, it might refer to the growing tendency of central banks to contribute to scientific knowledge, positioning themselves as producers of research; and, third, scientization may serve as a rhetorical device and as an organizational strategy to protect central banks' legitimacy, notably by shielding policy decisions behind a facade of technical rationality, seemingly detached from political considerations and inaccessible to the public. We refer to these three dimensions as, respectively, *policymaking*, *contributory,* and *legitimizing scientization.*

Delineating the concept of scientization along these three dimensions is crucial for empirical explorations – what we measure and observe varies significantly depending on which of the three dimensions of scientization is put under consideration (Goutsmedt et al., 2025). In this sense, a 'micro-history' approach (case-study-based) develops a more nuanced narrative about the scientization of central banks, challenging the notion of 'Fifth Age' by emphasizing the significant heterogeneity of geographical and historical contexts. However, our proposed partition of the scientization concept, along three dimensions, reaches beyond simply enriching the understanding of central banks' practices in diverse historical and geographical settings. The ambition of this article, serving as an introduction to the special section, is to move back from the case studies (the 'micro-history' level) to Marcussen's point of departure, that is, an overarching view of scientization in central banks.

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

We propose a conceptual framework for understanding the transformations of central banks, delineating three dimensions of scientization, while offering a unified approach. As a first step, we revisit the diverse interpretations of Marcussen's concept of scientization within central banking literature. Following this, we broaden our scope to examine how 'scientization' is applied in the wider social sciences, extending beyond the study of central banks. Based on this exploration, we propose a novel framework conceptualizing the scientization of central banks as their evolution into 'boundary organizations' – i.e., institutions that operate at the boundary between science and policy (Miller, 2001; Hoppe, Wesselink, and Cairns, 2013). First, central banks activities rely on internal ('backstage') boundary arrangements to balance their research-oriented and their policy-oriented activities: 'scientization' consists in the rise of boundary arrangements fostering greater agency of central banks' staff in shaping policies. The second and third dimensions of scientization address external ('frontstage') boundary arrangements developed to navigate central banks' 'dual accountability' – towards the broader scientific community and towards other groups: financial markets, political institutions, and civil society. On the one hand, scientization consists in the rise of boundary arrangements fostering greater engagement of central banks with academia, thus building 'scientific accountability'. On the other hand, scientization reflects an increasing degree of public reliance on science and 'techno-speak', as a necessary but not sufficient condition to establish 'public accountability' and build reputation.

This multidimensional approach of scientization facilitates a more contextual understanding of central bank transformations (Section 4). The various dimensions of scientization display overlapping but distinct historical temporalities. These dimensions are linked, on the one hand, to the transformation of central banks' objectives and their integration into specific networks of policy institutions, and, on the other hand, to the evolving nature of the relevant 'science' (i.e., to the transformations of economic knowledge and intellectual traditions in academia). Redefined as such, scientization provides a useful framework bridging the gap between the political economy literature analyzing the politics and power of money, and other perspectives on the history of central banks, notably those focusing on the institutional history of central banks, recounting the evolution of their missions and roles at the interface between states and markets (e.g., Singleton, 2010), and those rooted in intellectual history, emphasizing the history of doctrines of monetary economics and monetary policy (e.g., Mehrling, 2010).

The contributions gathered in this special section can all be understood within this reframed understanding of scientization. However, this conceptual reframing should prove more broadly useful. Like Marcussen's own landmark contribution, we hope that ours might stimulate further empirical and conceptual work on the transformation of central banks. Indeed, we think that distinguishing scientization as a phenomenon encompassing a range of relatively distinct issues raises important research questions to understand both the past and future evolution of central banks. What factors have shaped (or have prevented) an effective and appropriate interaction between expertise and policy decisions within central banks? How can central banks avoid being trapped within echo chambers and the silo effect (Tett, 2015), both of which risk invisibly constraining their 'framing' of economic problems (Fligstein, Brundage, and Schultz, 2017)? Considering central banks as knowledge 'producers', is there a danger, given both their substantial financial resources and their narrower research interests, that they create a biased and unequal research competition with universities? Can central banks ensure enough independence for their researchers to encourage institutional self-critique (Dietsch, Claveau, and Fontan, 2018: 4) or is there a risk of 'capture' (Conti-Brown, 2016; Zingales, 2013)? If scientization is a silver bullet strategy to serve as a rhetorical device to 'depoliticize' or 'a-politicize' monetary policy (Flinders and Buller, 2006), how can the accountability of central banks be maintained? Each of these questions touches on a

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

different aspect of what scientization entails, testifying of the richness of the concept. This diversity underscores the necessity of a fine-grained characterization to fully capture and understand the multifaceted nature of central banks' scientization.

Three dimensions of the scientization of central banks

Marcussen's starting point is the autonomization of institutions. Autonomous agencies, though part of the political system, gain the freedom to use their capabilities for delivering public goods through a 'process of depoliticization' (81). Drawing on Drori and Meyer (2006a), Marcussen suggests that scientization takes this further. Scientized agencies are not only autonomous, but also 'endowed with scientific authority', which leads to central banking increasingly being 'framed in apolitical terms' (82). For Marcussen, the evolution of central bank management mirrors these stages, with a shift from depoliticized to a-politicized central banking:[4]

> Autonomous central banking does not imply that media and politicians and other opinion makers do not … pay attention to the métier of central bankers; scientization does. Autonomous central banking does not imply that central bankers are automatically considered to be right when they make decisions; scientization does. And autonomization does not imply that central bankers are being uncritically listened to as the Delphi oracle, even when speaking out on matters that lie far beyond the narrow field of monetary and financial policy; scientization does. (Marcussen, 2009: 377)

Marcussen likens this 'apoliticization' to Weberian 'rationalization' process, where 'explicit, abstract, calculable rules and procedures' replace 'sentiments, traditions and rules of thumb' (375). However, in an earlier publication on the topic, he explicitly distinguishes scientization from 'the postwar trend of using a scientific approach in order to rationalize and optimize public administration' (Marcussen, 2006: 90). Under scientization, central bankers are not only applying scientific methods and theories; they are also developing such theories, positioning themselves as 'scientists in their own right' (90), thus blurring the line between 'science consumers' and 'science producers' (Marcussen, 2009: 370).

Marcussen aims at a critical assessment of the political consequences of scientization, pertaining, for instance, to the communication strategies of central banks. According to Marcussen (2009), central bankers, relying on the 'language of science' (377), become largely 'immune to political argumentation' (389). This shift places power in the hands of those proficient in this 'techno-speak', a term Marcussen uses to describe the specialized language that now dominates central bank discourse.

Marcussen views with skepticism the impact of scientization on science itself. First, he raises concerns about the authenticity and integrity of the scientific work produced by central banks, which resembles 'an ideology or dogma presented in the guise of science' rather than 'genuine science' (377). Marcussen further suggests that central banks' substantial financial resources, combined with their autonomy in funding research, could disproportionately influence research activities in specific areas of macroeconomics, skewing academic research (386).

Beyond his critical stance, Marcussen (2006: 90–93; 2009: 379) identifies several tangible (and heterogenous) indicators of scientization within central banks. These include the establishment of research departments, the recruitment of personnel with doctoral degrees in economics, the increased engagement with the scientific community, the promotion of scientific credentials as a career advantage, as well as the appointment of

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

scientifically trained individuals to governing positions, the initiation of working paper series, and the funding of specialized journals.

This portrayal offers a complex view of scientization. However, it raises key questions about the essence and impact of this process. What exactly do we mean by 'scientization'? If it involves central banks publishing more and establishing research departments, how does this contribute to their apolitization? Could the increasingly technical nature of central bank communications be attributed to new rhetorical strategies or rather to changes in staff profiles? We are confronted with multiple mechanisms, each potentially influenced by various factors, and each revealing different aspects of scientization.

The varied interpretations of scientization are evident in how scholars cite Marcussen's work. A systematic review of these citations reveals a broad spectrum of questions encompassed by the term scientization. Marcussen is frequently cited in relation to the high level of expertise of these institutions (e.g., van't Klooster, 2022: 1111) and the 'domination of technocrats' or 'econocrats' (Froud et al., 2012: 53). Others delve deeper, questioning how central banks use scientific knowledge in policymaking. For instance, Thiemann, Melches, and Ibrocevic (2021: 1439) discuss the development of macroprudential and microprudential tools after the Great Financial Crisis, noting the challenges posed by these relatively underdeveloped fields in economics for central bank experts. This discussion questions the feedback effects of scientization, with knowledge flowing both from economics to central banking and vice versa (Thiemann and Priester, 2024: 106).

Marcussen is also often cited in works analyzing central banks' contribution to science. Central banks are increasingly seen as not just 'consumers', but also 'producers' of economic knowledge (Thiemann and Priester, 2024: 8). Mudge and Vauchez (2016), for instance, describe the European Central Bank (ECB) as a key example of Marcussen's scientization ('hyper-scientization', in the words of the authors), due to its significant research investments, including a highly autonomous research division. Mudge and Vauchez (2016; 2018) and Schmidt-Wellenburg (2017: 446) argue that this commitment to research – despite being peripheral to ECB's daily operations – enables 'autonomy from other European ... political as well as [national central banks] agents'. Similarly, the increasing resemblance between central banks and the academic world, particularly the rise in PhD holders, is likened to a process of 'academization' (Georgakakis and Lebaron, 2018: 8).[5]

The central theme of Marcussen's thesis, the 'apoliticization' of monetary policy, is another common reason for citing his work (e.g., Coombs and Thiemann, 2022: 14–15). The portrayal of monetary policy as 'apolitical' and 'technical' is often presented as the justification of central bank independence (e.g., van't Klooster and Fontan, 2020: 865). This increasing reliance on technical tools conceals political decisions (van't Klooster, 2022: 9).

Coombs (2020: 522–523) highlights the connection between scientization, technical practices, and central banks' communication. This connection, he argues, is relatively underexplored when compared to the researched field of 'regulatory science' (Jasanoff, 1990), where knowledge plays a crucial role in the 'frontstage' (to use a Goffmanian term). There, knowledge is used to minimize uncertainty and bolster the public's perception of regulatory decisions as 'objective and credible'. Coombs refers to Abolafia (2012: 3), which probes into how central banking's veneer of technical rationality obscures 'the limits to rationality and conceals the social character of its policy choices'. Recent contributions, like Best's (2022) study on 'uncomfortable knowledge', push this discussion further. Best questions how central banks, whose authority increasingly hinges on their claim to scientific knowledge, publicly handle their own ignorance. This task is especially relevant vis-a-vis external pressures, both from financial markets and political actors, and at times when central banks confront 'considerable uncertainty about their economic assumptions and models' (5).[6]

The wide array of interpretations of Marcussen's concept of scientization (as the review of the literature above testifies) reveal uncertainties surrounding its precise definition

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

while also highlighting its relevance and heuristic value, notably the concept's capacity to encapsulate significant trends. This is why we think it is important, as a first step, to clarify the different dimensions that the concept of central bank scientization encapsulates.

First, *policymaking scientization* refers to the increasing reliance of central banks on scientific knowledge and expertise to meet policy objectives. Central bankers have progressively depended on complex scientific tools, such as forecasting or stress test models. Moreover, modern central bankers and their staff are frequently professional economists with substantial expertise (Dogan and Lebaron, 2025). This specific process of scientization aligns with what the political scientist Weingart (1999) describes as the 'instrumental utilization' of science.

Second, *contributory scientization* describes the trend of central banks becoming active producers of scientific knowledge. Beyond merely using scientific knowledge, central banks are evolving into research powerhouses, contributing significantly to scientific research. This development aligns with Collins and Evans' (2002: 244, 254) concept of 'contributory expertise', which designates experts who 'actually do [science]' and possess 'enough expertise to contribute to the science of the field being analyzed'.

Third, *legitimizing scientization* refers to the strategic use of scientization to gain authority and enhance the legitimacy of policy decisions through reference to technical rationality. This dimension of scientization relates to the 'legitimating' (Weingart, 1999) or 'symbolic utilization' (Amara, Ouimet, and Landry et al., 2004) of science, typical of regulatory agencies managing their reputation (Carpenter, 2010; Moschella, 2024). Effective communication is crucial in the attempt for central banks to appear credible to financial markets and to manage expectations (Braun, 2015), as well as to justify their independence to political actors (Best, 2022).

These three dimensions of scientization, we argue, can be integrated within a coherent framework (central banks as 'boundary organizations'), inspired by a broader literature in social sciences. This new framework facilitates a consistent historical exploration of the interplay between science and politics in central banks.

Scientization in social sciences and humanities

The concept of 'scientization', though not extensively prevalent within social sciences and humanities, spans a wide array of topics. A search in the Scopus database as of December 2023 yielded 269 articles or book chapters mentioning 'scientization/scientization' in their titles or abstracts since the 1970s (in English-speaking social science and humanities literature), along with an additional 254 contributions related to the similar term 'scientification'. These 523 contributions display, upon bibliometric analysis, a broad spectrum of themes associated with 'scientization' and 'scientification'.[7] While some areas diverge from our primary focus (the scientization of Chinese medicine, sports, and parenting practices, for example), others align closely with our interests. Three strands of literature are particularly relevant: studies on the scientization of organizations (Drori and Meyer, 2006a), literature on international organizations (Zapp, 2021), and political science research about the relationship between science and politics (Weingart, 1999; Hoppe, 1999).

New institutionalism and the scientization of organizations

The first approach is rooted in new institutionalism, particularly in what Hall and Taylor (1996) described as 'sociological new institutionalism'. Originating in the organization theory of the late 1970s, sociological institutionalism undermined the usual distinction made between 'rational' aspects of the social world, as exemplified by modern organizational and bureaucratic structures (*à la* Max Weber), and those aspects seen as

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

part of 'culture' (Hall and Taylor, 1996: 946). New institutionalists like John Meyer propose that modern organizational procedures are, in fact, cultural in nature: they are not just efficient practices, but they are foundational to the culture of modern societies (Meyer and Rowan, 1977).

Meyer later highlighted with Gili Drori the role played in our societies by 'scientization', understood as a broad social trend embodied in the expansion of 'traditional scientific activities' – as measured by the surge in the number of scientists, scientific publications, and conferences (Drori and Meyer, 2006a: 50). But scientization extends beyond quantitative growth; it influences how we perceive the world (Drori and Meyer, 2006b: 43), shaping our understanding of pressing issues (as illustrated by the case of global warming), and it frames our interpretation of social mechanisms (as exemplified by the widespread reliance on economic indicators, like GDP). Furthermore, scientization prescribes methods 'to deal with these issues and offer ground for policy-making', for instance through the use of 'econometric models' (Drori and Meyer, 2006b: 43).

Drori and Meyer observe that the 'scientization of modern culture' (32) is driven by both demand- and supply-side factors. On the demand side, organizations 'rationalized' 'chaotic uncertainties' to appear 'sensible and responsible' when facing these uncertainties (31). Scientization here implies that recognizing uncertainties and challenges necessitates action, often implemented through 'new technologies and organizational routines to deal with the now supposedly manageable environment, in order to be properly accountable' (31). On the supply side, social actors are increasingly equipped with the 'capacity to organize' and act according to 'professional conventions' (32). This shift is made possible and amplified by the global rise in educational level (Schofer and Meyer, 2005), positioning the higher education system as a crucial conduit for transmitting scientific authority into society (Drori and Meyer, 2006b: 41).

Drori and Meyer's view of scientization, transcends its application to central banks alone and discourages confining its relevance to the post-2000 era. But it provides a fitting framework for understanding organizations like central banks, and their tendency to develop 'new technologies' and 'routines' such as 'inflation targeting'.

Since the 1990s, many Western central banks have adopted inflation targeting as their policy strategy (e.g., Best, 2019; Wasserfallen, 2019). New Zealand and Canada were the first to adopt it, respectively in 1989 and 1991, followed by the UK in 1993 (Hammond, 2012). This approach involves setting a specific inflation rate as a target and holding the central bank accountable for achieving this rate. To this end, routines have been developed: central bank staff use macroeconometric models to forecast future inflation and to evaluate potential inflation trajectories based on different interest rates. This process involves a series of internal meetings geared towards generating these forecasts. Additionally, central banks have established protocols for external communication to the public about success or challenges in meeting the inflation target.[8]

As with various organizations, central banks have undergone a significant transformation in the postwar era, exemplifying the first dimension of scientization that we define as *policymaking scientization:* an increasing reliance on expertise and scientific knowledge to achieve policy objectives. Tasked with managing new economic uncertainties and challenges, these institutions have developed specialized expertise, ostensibly grounded in a scientific approach: the collection of new data, the development of models for forecasting, and the establishment of rationalized routines for integrating expert knowledge into policy decision-making.

International organizations as science powerhouses

Another relevant strand of literature focuses on the development of expertise and scientific practices in international organizations (IOs). This line of research, drawing on

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

Drori and Meyer's cultural perspective, seeks to understand the sources of legitimacy for IOs. It emphasizes the role of scientific education, along with the scientization of policymaking, in elevating the status of IOs that actively engage in knowledge production (Zapp, 2021: 1026–1027). Driven by competition for performance and survival, these organizations increasingly invest in developing their expertise.

As a result, IOs have transformed into 'veritable science powerhouses' (Zapp, 2021: 1023). Recent studies highlight that IOs are not merely indirect participants in science through promotion and association with professional scientific bodies, but that they are increasingly contributing 'directly [to science] through their actual scientific output' (Rautalin, Syväterä, and Vento, 2021: 5). Zapp (2018) underscores this transformation by documenting the rise in the 'number of scientifically active IOs' across various domains, such as education and natural resources management, or across different disciplines (5).

IOs leverage 'science as a strategic tool in advancing their own and influencing countries' agendas' (Zapp, 2021: 1023). However, their effectiveness in this regard hinges upon prioritizing scientific *production* over merely *using* existing scientific knowledge, which often falls into the realm of routine implementation. Thus, gaining greater legitimacy in the scientific community and among IOs in general requires an organization to generate and broadly disseminate new ideas, data, and models, and thus to engage in *contributory scientization*. This portrayal of IOs aligns closely with the evolution of modern central banks, which have increasingly become pivotal 'powerhouses' in the realm of economic research (Claveau and Dion, 2018).

However, as Zapp notes, the pursuit of legitimacy is not the sole driver behind IOs' (and by extension, central banks') enhanced contributions to scientific knowledge. The growth of a scientifically-trained expert workforce within these organizations creates a natural inclination towards research and publications. Staff members with a scientific background are more likely to value and engage in scientific research, seeking recognition in this field. In modern central banks, this leads to a notable tension: balancing the desire of staff to contribute to scientific advancements with the immediate demands of policy work (Acosta et al., 2024).

Policy analysis and 'speaking truth to power'

The literature on IOs aligns with the idea that such institutions have fostered a 'new production of knowledge' (Gibbons et al., 1994). This shift challenges the traditional view of universities as the 'sole and even the most authoritative producers of scientific knowledge' (Bekele, 2021: 10). IOs are seen as key players in 'Mode 2' science, which contrasts with the 'Mode 1' science typically associated with universities. 'Mode 2' science is characterized by the involvement of a diverse array of organizations and groups beyond academic institutions. Furthermore, the research produced under 'Mode 2' is more closely attuned to societal needs and concerns, reflecting a more integrated and application-oriented approach to knowledge creation.

The 'Mode 1' vs. 'Mode 2' distinction and the corresponding idea of a 'post-normal science' (Funtowicz and Ravetz, 2018) or 'postacademic science' (Ziman, 1996) have faced criticism from political scientist Peter Weingart. Weingart (1997) challenges the idea of a fundamental epistemological transformation of science or a dissolution of its identity (608). Instead, he argues that the increasing centrality of science brings it into contact with new 'organizational boundaries' (610). Weingart suggests examining this transformation through the lens of the interaction between politics and science, identifying three 'interfering processes': 'the scientification of politics', 'the politicization of science', and 'the medialization of the relationship between science and politics' (605).

The 'scientification of politics' refers to the integration of scientific knowledge into political decision-making processes (599). This trend has led to the formation of hybrid

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

communities operating at the blurred boundaries between science and politics. This process also implies that science increasingly plays a 'political agenda-setting role', 'by defining the problems, on which it is then called to give advice' (Weingart, 1999: 157, 155).

Weingart posits that the roles of scientific advice in policymaking can essentially be distilled into two fundamental categories: 'instrumental' and 'legitimating' (155). The instrumental use of scientific research involves its direct application in informing and shaping policy decisions, which we label *policymaking scientization*. Here, scientific knowledge is employed to address specific problems, guiding decision-makers on the potential outcomes of various options (like the use of macroeconometric models does for central bankers). Conversely, the legitimating use of scientific advice aims to provide credibility and authority to policy decisions, what we call *legitimizing scientization*. In this context, scientific knowledge is used to rationalize and justify policy choices, thereby enhancing their legitimacy and public acceptance.[9]

In Weingart's framework, alongside the scientification of policymaking, there is a concurrent 'politicization of science': the integration of science into policymaking renders certain areas of knowledge politically sensitive. For instance, the revelation of certain scientific findings can 'create an immediate need to act politically' (Weingart, 1997: 606).[10] Political competition often drives a quest for persuasive arguments, pushing scientific discourse to its controversial frontiers. This dynamic leads to the public replication of scientific controversies, a phenomenon Weingart describes as the 'medialization'.

The scientification of policy thus also feeds back into the realm of science. Just as science can be used instrumentally for legitimation in politics, one can imagine instrumental and legitimate uses of politics in science: for instance, the instrumental use of expertise in science might be used to secure research funding, while its legitimating function could be aimed at garnering public support and acceptance for research endeavors (Weingart, 1999: 160).

Weingart depicts a complex, ever-evolving relationship between science and politics. While they maintain separate identities, they continually negotiate their boundaries. Expanding on this, Hoppe (2005) introduces the notion of 'boundary arrangements'. Drawing inspiration from Shapin's and Halffman's uses of the concept of 'boundary work', Hoppe describes these arrangements as practices employed by actors to protect their domain from external interference, while setting norms for interaction within and across these domains. This involves 'demarcation' (defending against unwanted participation) and 'coordination' (facilitating and defining proper interaction). In organizations at the interface of science and politics, these boundary arrangements deal with the potential for these organizations to develop 'productive reciprocity and meaningful communication' between the two spheres (208).

The insights from political science regarding scientization provide a robust foundation for re-conceptualizing and defining scientization in central banks. The interplay between science and politics within central banks is a dynamic, bidirectional process involving the continuous negotiation and establishment of boundary arrangements by actor groups.

Central banks as boundary organizations

The challenge for defining the historical process of scientization pertains, we argue, to the difficulty of drawing the line between 'science' and 'non-science' within central banks. Indeed, these institutions became both 'consumers' and 'producers' of scientific knowledge; their public communications often adopt a technical, 'scientific' veneer, although this may sometimes serve to obscure the political underpinnings of their decision – leading to perceptions of their science as somewhat 'inauthentic'. Approaching

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

scientization through the lens of 'boundary work' (Gieryn, 1983) and 'boundary organizations' (Guston, 1999) is thus constructive in solving this challenge of demarcation.

Gieryn's constructivist approach disregards inherent, 'transcendent characteristics' of science, focusing instead on 'how participants themselves attempt to demarcate science and non-science' (Guston, 1999: 87). This perspective aligns with the principles of Drori and Meyer's new institutionalism, emphasizing the cultural dimension (standards and rituals) inherent to labeling practices as either 'scientific' or 'non-scientific'. In the domain of policy, boundary work does not limit to *demarcation* between science and politics, but also attempts 'to find productive *coordination* through a division of labor' (Hoppe et al., 2013: 284). This 'boundary work' and the resulting 'division of labor' is an evident aspect in the case of central banks: there, a tension exists between research-oriented and policy-oriented tasks. The organizational history of the Bank of England, for example, is marked by administrative restructurings aimed at managing these distinct roles (Acosta et al., 2024; Goutsmedt et al., 2025).

Boundary work becomes particularly salient in policymaking institutions that, like central banks, invest significant resources in scientific research. For instance, Jasanoff (1990) shows that regulatory agencies may intentionally blur the boundaries between science and politics to facilitate policymaking and potentially improve outcomes – see Coombs (2020) for a similar point about central banks and stress tests. However, this approach is not without risk, as it can lead to 'dangerous instabilities between science and nonscience', which may be gathered under the labels of the 'politicization of science' and the reciprocal 'scientification of politics' (Guston, 2001: 399).

The concept of 'boundary work' has recently been applied in the literature about central banks by Coombs and Thiemann (2022), who highlight the role of central banks in continually redefining the boundary between the state and the economy. As a 'key node of a network of public and private institutions', central banks help to navigate and shape the state-economy interface (5).[11]

Drawing from Gieryn's (Gieryn, 1983) original concept of 'boundary work', we argue that scientization can be reconceptualized as the process of central banks becoming 'boundary organizations': that is, as a first approximation, institutions evolved towards actively engaging with the 'boundary work' of delineating and managing the intersection of scientific research and policymaking.

More specifically, we refer to 'boundary organization' in the vein of Guston's (1999) and Hoppe et al. (2013)'s interpretation. In Hoppe et al. (2013: 285)'s framework, boundary organizations are seen as a specific form of 'boundary arrangements' displaying three key characteristics. First, a hallmark of boundary organizations is 'double participation', meaning that they involve actors from both sides of a boundary (Guston, 2001: 401; Hoppe et al., 2013: 285). 'Double participation' captures well, for instance, the evolution of the characteristics of central banks' personnel, where individuals increasingly possess scientific and political credentials, even at high hierarchical levels (Dogan and Lebaron, 2025).

The second defining characteristic of boundary organizations is 'dual accountability' (Hoppe et al., 2013: 285). Such organizations require 'the approval of science for the credibility of their knowledge claims as well as the approval of political institutions for the legitimacy of their policy orientations' (Miller, 2001: 483). In the case of central banks (particularly with the rise of financialization), the 'approval' required for legitimating 'policy orientations' is both delivered by political institutions (governments, treasuries, and other independent organizations) and financial markets.[12] 'Dual accountability' explains the growing interaction between central banks and the academic community, evident in the historically increasing number of conferences that bring together academics and central banks' staff and policymakers, and in collaborative research projects (Claveau and Dion, 2018; Dutilleul, 2025).

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

The third feature of boundary organization is the 'use of boundary objects' (Hoppe et al., 2013: 286). These are tools or concepts that enable coordination between scientists and policymakers. In the realm of central banks, economic models started, from the 1970s onwards, to serve as quintessential boundary objects: they are shaped by both the political context (their purposes, e.g., forecasting inflation) and the scientific context (e.g., state-of-the-art econometric estimation techniques). Moreover, they represent a co-construction effort involving the preferences of both policymakers and experts (within or outside the central bank), and are subject to various material and organizational constraints (Acosta and Cherrier, 2021; Goutsmedt et al., 2024).

The concept of boundary organization offers a compelling framework for analyzing central banks, providing a conceptually solid perspective on scientization. This approach also enables us to move beyond the macro-level focus prevalent in existing literature on scientization. While Marcussen's approach primarily views the central bank as a monolithic entity seeking legitimacy and authority through science, the boundary organization framework encourages a more nuanced view. It suggests considering central banks as composed of various agents with distinct incentives and preferences, as highlighted through the concepts of double participation, dual accountability, and the use of boundary objects.

As explained by Hoppe et al. (2013: 285), dual accountability leads to distinct discourses aimed at different audiences. In external relations, boundary organizations might employ 'front-office' discourses, which align with official accountability requirements. Conversely, within internal relations, such as among different advisory bodies, more 'profane' or 'back-office' insider discourses are prevalent. This 'double-speak' reflects two contrasting depictions of the science-policy interface: on the one hand, linear knowledge transfer for public consumption, and, on the other hand, co-construction in internal discussions. Moreover, maintaining the illusion of linear knowledge transfer as the official story is often in the institutional self-interest of both scientific and political entities, as it legitimizes their collaborative relationship.

The notion of 'double-speak', distinguishing between back-office and front-office narratives, aligns seamlessly with Goffman's dramaturgy (Goffman, 1956), as adapted recently by Coombs (2020), Kranke (2022), and Cassar (2024).[13] In this framework, the 'frontstage' behavior of an organization is its public persona, where it presents itself to its audience. For a central bank, this frontstage is the domain of projecting its expertise – or strategically managing its ignorance as Best (2022) suggests. Meanwhile, the 'backstage' is where the real action happens: in meeting rooms, where strategies and policies are discussed amidst uncertainties and complexities hidden from the public eye (Coombs, 2020). As Cassar (2024: 3) highlights, it is in the backstage where experts exert their agency.

In the frontstage, a semblance of unity and coherence is maintained, allowing the central bank to leverage its scientific authority. When unity prevails, the central bank can build on its scientificity to gain authority. However, Cassar (2024) observes that, sometimes, backstage disagreements may spill over into the frontstage, challenging the institution to publicly reforge consensus. Consequently, an organization like a central bank often finds itself balancing two critical needs: satisfying the expert voices in the backstage, who influence policy framing, and meeting frontstage expectations of scientific consensus and uniformity. This balance requires reconciling the internal influence of expert opinions with the public expectation for a coherent, scientifically-based approach to policy.

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

A contextual understanding of scientization

Before outlining the various dimensions of scientization within the framework, we have established, it is important to underline that our characterization of central banks as boundary organizations must be understood as contextually dependent.

First, scientization and our framework should be examined with a historical perspective. Marcussen's portrayal of scientization as the 'fifth age' of central banking in the late 1990s has been understood as suggesting a linear and inevitable progression towards increased scientization (however defined). By distinguishing the different dimensions of scientization, we may identify overlapping temporalities and uncover distinct boundary arrangements, each with its own logic, driven both by political and scientific arrangements proper to a time and place.

Policymaking scientization predates the 1990s, by several decades: central banks have been using statistical series since the late-nineteenth century (see Dutilleul, 2025). Since the 1960s, they also have driven the development of macroeconometric models (see e.g., Acosta and Cherrier, 2021). These are both examples of scientific collaboration between universities and central banks' staff to develop policy tools. Although *contributory scientization* is, comparatively, a more recent phenomenon, there were also early examples of this phenomenon before the 1990s (Dutilleul, 2025). In recent years, research policies aimed at fostering central bank economists' contributions to science have proliferated within various central banks, yet the reasons behind their significant investment in this area remain context-dependent.

Similarly, *legitimizing scientization* can be observed in the early history of central banks. Even when central banks had no independence in operating monetary policy, emphasizing technical knowledge and decision-making capabilities informed by scientific principles constituted an important part of powerplays between central banks and governments (see Acosta et al., 2024, for the case of the Bank of England and the Treasury). It is, though, with the 1990s and the spreading of central bank independence (McNamara, 2002), that this aspect of scientization has risen to prominence. The growing need for central banks to legitimize their actions through science parallels this independence process (and the political controversies surrounding it). Legitimizing scientization could also be seen as one driver of the 1990s wave of independence insofar as the belief in central banks' superior expertise in making appropriate monetary policy decisions is a decisive argument in favor of their emancipation from governments (Abolafia, 2012; Best, 2022). In this respect, academic contributions in macroeconomics in the 1990s confidently argued about the achievement of a 'science of monetary policy' (Clarida, Galí, and Gertler, 1999).

This brings us to the second contextual element: the boundary work performed by central banks is shaped by the political environment in which they operate and their policy objectives. Although central banks may now sometimes resemble 'scientific or academic research centers' (Mudge and Vauchez, 2018: 249), they fundamentally remain *policy* institutions (Conti-Brown, 2016, chap. 4), responsible for monetary policy, exchange rate policy, financial stability, and other mandates. This means that any process of scientization is inherently subordinated to the institution's policy practices. The intensity of scientization in central banks (compared to other organizations; Drori and Meyer, 2006a) mirrors the raising stakes of their policy role: indeed, central banks have acquired a more pivotal role in the management of the economy since the 1970s (Wansleben, 2022), with the increasing importance of monetary policy relative to fiscal policy (or 'monetary dominance'; see e.g., de Haan et al., 2018; Wansleben, 2024). Similarly, the adoption of inflation targeting (Best, 2019) emphasized the importance of forecasting inflation and predictability of central banks actions, as well as managing and coordinating expectations (Braun, 2015), thereby pressuring central banks' to adopt a cautious communication to

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

appear 'credible'. The endorsement of new financial stability goals also created a need to develop more relevant expertise (Thiemann, 2024).

Besides their policy goals and the instruments they use, central banks are also integrated into a dynamic and evolving network of policy institutions, including national treasuries, other central banks, financial supervision authorities, and international organizations. Such national and, most importantly, international networks have evolved and acquired a greater prominence following the transformations of capitalism since the 1970s, with financialization and globalization (Krippner, 2011; Johnson, 2016). Moreover, the financialization of the global economy has heightened central banks' accountability to the actors shaping financial markets. That is, the boundary between State and political institutions on the one side, and private, financial entities on the other, plays a crucial role in the public-facing activities of central banks (Coombs and Thiemann, 2022). The far-reaching implications of monetary policy decisions for the global economy and the stability of the global financial system have made this network a key component for the way each central bank navigates the policy-science interface, both in its internal (backstage) and its public-facing (frontstage) activities.

Furthermore, the primacy of political objectives sometimes leads central banks to view their tools as inadequate or to doubt the utility of 'science' in policymaking. For example, the 2008 quantitative easing measures were taken without a deep understanding of their potential effects (Acosta et al., 2024). During crises, central banks' leadership may deprioritize research in favor of addressing more directly immediate economic issues (Goutsmedt et al., 2025). Additionally, they may recognize the need for less technical communication, realizing that relying heavily on technical jargon and scientific concepts does not always ensure effective communication.

Finally, the nature of the 'science' involved in 'scientization' is also a key contextual element. Boundary work by central banks depends significantly on the disciplinary context, that is, on the evolutions occurring on the 'other side of the boundary', namely the academic community. Academia is not a monolithic counterpart for central banks; instead, it should be apprehended through the lens of its own 'moving boundaries' across disciplines and subdisciplines, intellectual traditions, and local communities. This entails paying specific attention to the moving disciplinary interaction between economics and neighborhood disciplines (such as finance or computer science, for instance). Similarly, within economics, sub-disciplinary demarcation can occur across several subfields: most obvious interactions relevant to central banks' scope are between macroeconomics and monetary economics, although other interactions (for instance, those related to subfields like financial economics, behavioral economics, and computational economics) could also affect central banks' own work (Plassard, 2020).

The confrontation between intellectual traditions, especially within macroeconomics, is highly relevant for central banks. A key example is the academic dynamic of a 'new neoclassical synthesis' (Goodfriend and King, 1997), producing a theoretical framework blending different intellectual traditions ('new classical' and 'new Keynesian' macroeconomics). The adoption of this framework by central banks led to the emergence of 'DSGE models' (e.g., Sergi, 2020). Indeed, while central banks often resisted monetarists' ideas in the 1980s – or adopted them temporarily without strong commitment (Clift, 2020) – the so-called new consensus in macroeconomics in the 1990s found greater acceptance. This consensus primarily focused on the implementation of monetary policy and the importance of 'credibility'. As a result, the 1990s marked a period of co-construction by macroeconomists and central bankers of a new (frontstage) discourse on inflation and monetary policy (Goutsmedt, 2021). This new framework emphasized central bank independence, credibility, managing expectations, inflation targeting, etc. The strong alignment between mainstream macroeconomic thought and central bank-way-of-

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

thinking policies means that any weakening of this mainstream approach also affects central banks' reliance on this specific scientific framework.[14]

Finally, the characteristics of local academic communities and, in particular, national communities, create specific conditions for interaction between academia and central banks. Indeed, despite the phenomenon of 'internationalization' of economics (Fourcade, 2006), national peculiarities persist at many levels (research topics, intellectual traditions, modelling habits, professional standards, and so on). Thus, the interaction between a central bank and its local academic community is also influenced by such peculiarities.

Redefining scientization through boundary organizations

The concept of boundary organizations, along with Goffman's frontstage and backstage dichotomy, enhance our contextual understanding of scientization in central banks, allowing for a clear segmentation of the three distinct dimensions of scientization.

Policymaking scientization is 'internal', focusing on the backstage boundary arrangements. Here, the emphasis is on the work of distinguishing research-oriented activities from policy-oriented ones, while fostering effective coordination between scientific expertise and policymaking. This dimension addresses how central banks internally navigate and manage the intersection of science and policy.

The remaining two dimensions are external, stemming from the 'dual participation' and 'dual accountability' of modern central banks. *Contributory scientization* involves central banks' interactions with research and academic networks, highlighting their pursuit of scientific legitimacy. This includes their engagement with the broader scientific community and their contributions to academic discourse, but also the feedback effect that this engagement may have on the backstage organization of research work within central banks.

Legitimizing scientization centers on the quest for political legitimacy and the use of scientific authority in the frontstage. This involves how central banks leverage scientific rationale and expertise to validate and reinforce their decisions and public image, not only in the eyes of political actors or market operators but also of a broader public (Moschella, 2024).

A range of research questions emerges within these three dimensions of scientization, even if there may be some overlaps and intersections at times. We believe that this distinction and this framework offer a more structured and effective way to conceptualize and investigate scientization. It also serves as a comprehensive platform that accommodates a variety of approaches and research interests. It is particularly conducive to the work of social scientists across various disciplines, including sociologists specializing in professions, expertise, or organizations, historians of economics and central banks, political economists, political scientists, and philosophers of expertise. By encompassing these diverse perspectives, the framework enables a richer and more multifaceted exploration of scientization in central banks.

The backstage boundary between research and policy

How do central banks balance and coordinate their research-oriented activities (e.g., building new data series and models, participating in conferences, and publishing academic papers) and policy-oriented activities (e.g., writing policy briefs, producing forecasts)? The cultural process of scientization in organizations, as outlined by Drori and Meyer (2006b), has heightened expectations for policy institutions to address uncertainties through scientifically-based policies. Post-World War II, central banks have been under pressure to rationalize their policies and increase their accountability, leading to a demand

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

for highly skilled staff. Throughout this period, a consistent need has emerged across central banks to distinguish between day-to-day policy work and more 'analytical' medium- or long-term tasks (Acosta et al., 2024; Dutilleul, 2025). Central banks' executives are thus challenged to prioritize the type of analytical research that provides long-term, actionable insights without compromising short-term operational effectiveness.

Over the past three decades, central banks have experimented with different organizational models to encourage research aligned with academic standards. There are notable differences across institutions: some, like the ECB, have established independent research departments, while others, like the BoE, maintain tighter control over research activities by avoiding the creation of independent research departments. These variations likely stem from broader institutional settings, organizational path-dependency, and executive preferences, but also the staff's ability to influence the balancing of activities.

However, this shift has met with varying levels of acceptance. Indeed, the influx of staff with a strong orientation towards skill and academic engagement has created a group within central banks with distinct incentives, particularly concerning academic involvement. Consequently, executives must find ways to satisfy this group's need, such as allowing time for research and publication, notably to attract 'top researchers'.

Additionally, the internal boundary work in central banks involves not just balancing research and policy activities, but also coordinating staff and policymakers' co-construction of policy tools, or 'boundary objects'. Key questions arise: How is internal expertise leveraged in times of crisis and when new interventions are required (Cassar, 2024)? How are internal disagreements resolved? Again, the approaches vary significantly over time and among different central banks. Some events are marked by a stronger hierarchical influence in decision-making, while at other times, staff members are able to exercise greater agency in shaping policies. In this perspective, an increasing trend towards 'scientization' within central banks can be characterized by the enhanced agency of the staff. This shift implies that as central banks evolve and deepen their commitment to research and evidence-based policy, staff members, particularly those with strong academic and technical backgrounds, gain more influence in shaping policy decisions. They are not just implementers of established directives, but active contributors to the policy-making process.

Pursuing scientific legitimacy through academic engagement

Modern central banks engage in a multifaceted relationship with academia, through a range of collaborative activities, including organizing academic conferences, publishing scholarly journals and working paper series, and fostering collaborations between central bank staff and academic researchers. Additionally, in recent decades, many central banks have established visiting programs for researchers and Ph.D. training programs. These initiatives aim notably at aligning the research pursuits of central banks with the latest academic developments and thus obtain scientific legitimacy.

On the scientist's side, working as a researcher in a central bank may cover instrumental motivations: it allows access to funding (sometimes larger than in academia), or privileged access to specific data, gathered by central banks. Being involved in research with direct policy implications also brings symbolic retribution to academics. And yet, working in central banks involves constraints for researchers, notably their autonomy regarding the choice of topics as well as the time they can dedicate to research work.

This *contributory scientization* opens three main types of questioning. First, regarding the extent to which the community of researchers within central banks mirrors the academic community. Do they share similar 'epistemic cultures' (Knorr-Cetina, 1999) or embody comparable scientific 'personae' (Daston and Sibum, 2003)?[15] The dual pressures faced by

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

these researchers – to produce both cutting-edge and policy-relevant research – could shape their methodologies and the robustness of their findings. Furthermore, the constrained autonomy in selecting research topics, with central banks often dictating research agendas aligned with institutional priorities, may limit the scope of inquiry. Additionally, the hierarchical structure of central banks, in contrast to the more collegial environment of universities, might lead to self-censorship or reluctance to critically assess the bank's policies.[16]

Second, the interactions between central banks researchers and the broader academic community could influence the bank's internal research organization and production. The 'boundary objects' such as macro-econometric models, vital for policy decisions, are also subject to academic scrutiny. Researchers engaged in developing these models, especially those with strong academic links and training, may be more receptive to external academic feedback. This dynamic could lead to challenges or revisions of certain models or approaches within the bank, particularly if they are deemed outdated or misaligned with current academic standards (Goutsmedt et al., 2024).

Finally, the active participation of central banks in the field of research exerts a significant influence on the academic landscape itself. Central banks' substantial financial resources and staffing for research have positioned them as key players in economic conferences and publications, especially in macroeconomics and monetary economics (Claveau and Dion, 2018). They not only compete with universities but also emerge as coveted career destinations for economists. This prominence raises questions about the potential bias in research topics. The prevalence of central banks in academic discourse might steer the research focus of the wider academic community, leading to a convergence around themes and approaches favored by central banks researchers (and possibly, in turn, central banks' policymakers).

Leveraging science to construct political legitimacy

Legitimizing scientization in central banks may be observed through their frontstage communication strategies. In this perspective, employing science and 'techno-speak' enables them to bolster their credibility and rationalize their policies, while potentially deflecting political criticism. However, it is crucial to recognize that a 'scientized' approach to communication is just one of many strategies. Although central bank functions are inherently technical, relying excessively on technical communication can sometimes backfire, creating an impression of being out of touch with economic realities.

The extent to which central banks rely on technical language and scientific references varies based on several factors. One such factor is their response to 'uncomfortable knowledge' as underlined by Best (2022). Central banks, whose authority hinges on expertise, often find their own lack of certainty in an uncertain economy to be particularly challenging. Various strategies have been developed to address this. For example, in the 1990s, the Bank of England introduced 'fan charts' as a way to communicate uncertainty about future economic variables.[17] These charts, which depict a range of possible outcomes, were partly intended to shift focus away from point-estimate forecasts, which might prove too easily inaccurate. However, some newspapers criticized this forecasting practice, suggesting it allowed the Bank to always appear correct regardless of the economic outcome (Acosta et al., 2024).

Central bank communication is by nature political and thus strategic, tailored to the audience. Goutsmedt et al. (2025) demonstrate how the level of technicality of the Bank of England executives adjusts based on the audience, with more complex economic references made in front of fellow central bankers and economists compared to business organizations. Similarly, the ECB has emphasized its 'data-driven' policy decisions in recent months, highlighting its focus on the latest economic indicators and projections.

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

Concurrently, ECB President Christine Lagarde has underlined the limitations of econometric models, suggesting that the ECB 'cannot just rely only on textbook cases and pure models' (Arnold, Smith, and Fleming et al., 2023). In certain instances, central banks may even employ 'folk ideas' to craft compelling narratives (Diessner, 2023), rather than relying on theoretical concepts. This duality underscores that central bank policymakers, despite their potential expertise, remain political figures under public scrutiny, continually navigating the quest for political legitimacy. Their strategies extend beyond merely projecting scientific authority, requiring a nuanced and adaptable approach to communication.

Finally, these strategic choices must be understood in the broader context of the politics of money. The depoliticization or re-politicization of monetary issues are not solely the outcomes of central banks actions: rather, these processes imply the agency of many other actors. Central banks must continually adapt their communication strategies to address the shifting salience of certain issues.[18] *Legitimizing scientization* is thus a byproduct of their strategic maneuvering within an environment shaped by existing power relationships.

Acknowledgements. We would like to thank Juan Acosta, Béatrice Cherrier, François Claveau, and Clément Fontan for their contributions to the Rebuilding Macroeconomics project (Policy-Academia Pipeline) from which this special section emerged. Additionally, we would like to thank all the participants of the symposium on central banks' scientization at the conference of the European Society for the History of Science in Brussels in September 2022. We are also grateful to François Claveau, Ana Costa, Aykiz Dogan, Maxence Dutilleul, Clément Fontan, and Gonçalo Marçal for their comments on this introductory article, as well as the two anonymous reviewers for their valuable suggestions.

Notes

1. As Goutsmedt et al. (2025) point out, Marcussen actually navigates between different possible definitions of scientization.
2. For details about the three first 'ages' identified by Marcussen, see notably Table 1 in Marcussen (2009: 376).
3. '[This chapter] adopts a meso-historical perspective on central banks and central banking in order to identify the conjunctures through which central banking has developed over the last couple of centuries. In short, at this level of abstraction, the chapter considers central banking and central banks to be distinct analytical categories' (Marcussen, 2009: 373).
4. Marcussen (2006) mentions four 'stages', whilst Marcussen (2009) invokes *five* 'ages' in total, but the overarching narrative remains the same.
5. There are also plethora of references to Marcussen to underline the development of an epistemic 'network', 'community' or 'clan structure' around central banks (e.g., Mudge, 2015: 77; Baker, 2015: 356; Moschella and Diodati, 2020: 198; Wansleben, 2018: 7)
6. Marcussen's contributions focus on the political consequences of central banks scientization and he leaves aside the fact that central banks' communication is significantly destined to financial market actors.
7. We employed bibliometric coupling and topic modeling for an exploratory analysis of the corpus, following a similar methodology to Goutsmedt and Truc (2023). This approach was useful to identify key characteristics and trends in the various literature on scientization. Given the exploratory nature of this analysis, a detailed description of the corpus construction and methods is not provided, as our focus is primarily on the conceptual insights gained.
8. See Acosta et al. (2024) for an account of the transformation in practices introduced by the adoption of inflation targeting in the UK in the 1990s.
9. Another widely recognized typology of applications of research distinguishes 'instrumental', 'conceptual', and 'symbolic' uses (Amara et al., 2004). The instrumental use is practical and problem-solving oriented, where research is directly applied to address specific, predefined issues. The conceptual use refers to a more abstract and indirect use, involving the application of research concepts and theories to understand and interpret events or phenomena. Lastly, the symbolic use of research is strategic, where research findings or ideas are employed as 'political ammunition' (79) to lend authority and credibility to policy decisions.
10. The Covid-19 period has provided us with numerous examples of scientific publications instantly discussed publicly and used in political controversies (Christensen and Lægreid, 2022).

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

11. In the same journal issue as Coombs and Thiemann (2022), Thiemann (2022) also applies the concept of 'boundary work'. He examines the efforts of central banks economists as 'boundary walkers' developing new tools for financial risk assessment in the aftermath of the Great Financial Crisis.
12. We could claim that central banks face today a 'triple' accountability, since they also act at the crucial boundary between the 'State' and financial markets (Coombs and Thiemann, 2022). However, we think that, when dealing with scientization, it is more appropriate to keep the idea of 'dual accountability': indeed, the relevant boundary for the analysis is the one demarcating 'science' and 'non-science'.
13. See also Thiemann and Lepoutre's (2017) use of the Goffmanian concept of a 'backstage' in regulatory struggles.
14. See Acosta et al. (2024) for an illustration of the impact of criticisms against DSGE at the Bank of England.
15. 'Epistemic cultures' refer to the cultures of knowledge creation and verification within different scientific fields. It encompasses the array of practices, arrangements, and mechanisms characteristic of how knowledge is produced in specific disciplinary contexts. This concept highlights the diversity in the ways different scientific communities approach, understand, and validate knowledge. The concept of 'scientific personae' focuses on the identities and characters embodied by scientists in different historical and cultural contexts. It addresses how scientists present themselves, their styles of thought, and the cultural and intellectual milieu that shapes their work.
16. This point has been raised recently by the Economic Affairs Committee of the UK parliament which stated that 'central banks take a more positive view of quantitative easing than independent analysts' (Economic Affairs Committee, 2021: 19).
17. It was eventually considered as a useful innovation and adopted by many central banks.
18. For instance, central banks started to develop and communicate about a battery of indicators regarding the contribution of rising profits to inflation after the concept of 'greedflation' spread in public debate in 2023 (Inman, 2023).

References

Abolafia, M.Y. (2012) Central banking and the triumph of technical rationality. In: Knorr-Cetina, K. and Preda, A. (eds.) *The Oxford Handbook of Sociology of Finance*. Oxford: Oxford University Press, 94–112.

Acosta, J. and Cherrier, B. (2021) The transformation of economic analysis at the Board of Governors of the Federal Reserve during the 1960s. *Journal of the History of Economic Thought*, 43(3): 323–349.

Acosta, J., Cherrier, B., Claveau, F., Fontan, C., Goutsmedt, A., and Sergi, F. (2024) Six decades of economic research at the Bank of England. *History of Political Economy*, 56(1): 1–40.

Amara, N., Ouimet, M., and Landry, R. (2004) New evidence on instrumental, conceptual, and symbolic utilization of university research in government agencies. *Science Communication*, 26(1): 75–106.

Arnold, M., Smith, C., and Fleming, S. (2023) Central banks rethink forecasting after failures on inflation. *Financial Times*, 28 December. https://www.ft.com/content/5d7851f3-ef7c-4599-8a5c-c34cecb83511. Accessed 22 January 2024.

Baker, A. (2015) Varieties of economic crisis, varieties of ideational change: How and why financial regulation and macroeconomic policy differ. *New Political Economy*, 20(3): 342–366.

Bekele, T.A. (2021) Problematizing scientization in international organizations. *Nordic Journal of Comparative and International Education (NJCIE)*, 5(3): 6–22.

Best, J. (2019) The inflation game: targets, practices and the social production of monetary credibility. *New Political Economy*, 24(5): 623–640.

Best, J. (2022) Uncomfortable knowledge in central banking: Economic expertise confronts the visibility dilemma. *Economy and Society*, 51(4): 559–583.

Braun, B. (2015) Governing the future: The European Central Bank's expectation management during the Great Moderation. *Economy and Society*, 44(3): 367–391.

Carpenter, D.P. (2010) *Reputation and Power: Organizational Image and Pharmaceutical Regulation at the FDA*. Princeton, NJ: Princeton University Press.

Cassar, D. (2024) Economics as intervention: Expert struggles over quantitative easing at the Bank of England. *Socio-Economic Review*, 22(3): 1225–1254.

Christensen, T. and Lægreid, P. (2022) Scientization under pressure: The problematic role of expert bodies during the handling of the COVID-19 Pandemic. *Public Organization Review*, 22(2): 291–307.

Clarida, R.H., Galí, J., and Gertler, M. (1999) The science of monetary policy: A New Keynesian perspective. *Journal of Economic Literature*, 37(4): 1661–707.

Claveau, F. and Dion, J. (2018) Quantifying central banks' scientization: Why and how to do a quantified organizational history of economics. *Journal of Economic Methodology*, 25(4): 349–366.

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

Clift, B. (2020) The hollowing out of monetarism: The rise of rules-based monetary policy-making in the UK and USA and problems with the paradigm change framework. *Comparative European Politics*, 18(3): 281–308.
Collins, H.M. and Evans, R. (2002) The third wave of science studies: Studies of expertise and experience. *Social Studies of Science*, 32(2): 235–296.
Conti-Brown, P. (2016) *The Power and Independence of the Federal Reserve*. Princeton, NJ: Princeton University Press.
Coombs, N. (2020) What do stress tests test? Experimentation, demonstration, and the sociotechnical performance of regulatory science. *The British Journal of Sociology*, 71(3): 520–536.
Coombs, N. and Thiemann, M. (2022) Recentering central banks: Theorizing state-economy boundaries as central bank effects. *Economy and Society*, 51(4): 535–558.
Daston, L. and Sibum, H.O. (2003) Introduction: Scientific personae and their histories. *Science in Context*, 16(1–2): 1–8.
De Haan, J., Bodea, C., Hicks, R., and Eijffinger, S.C.W. (2018) Central bank independence before and after the crisis. *Comparative Economic Studies*, 60(2): 183–202.
Diessner, S. (2023) The power of folk ideas in economic policy and the central bank–commercial bank analogy. *New Political Economy*, 28(2): 315–328.
Dietsch, P., Claveau, F., and Fontan, C. (2018) *Do Central Banks Serve the People?* Cambridge: Polity Press.
Dogan, A. and Lebaron, F. (2025) Scientization of central bank governance: A global study of governors' biographies, 2000–2020. *Finance and Society*, 11(2).
Drori, G.S. and Meyer, J.W. (2006a) Global scientization: An environment for expanded organization. In: Drori, G.S., Meyer, J.W., and Hwang, H. (eds.) *Globalization and Organization*. Oxford: Oxford University Press, 50–68.
Drori, G.S. and Meyer, J.W. (2006b) Scientization: Making a world safe for organizing. In: Djelic, M.L. and Sahlin-Andersson, K. (eds.) *Transnational Governance Transnational Governance Institutional Dynamics of Regulation*. Cambridge: Cambridge University Press, 31–52.
Dutilleul, M. (2025) From technical to academic central banking: The scientization of the Banque de France. *Finance and Society*, 11(2).
Economic Affairs Committee (2021) Quantitative easing: A dangerous addiction? House of Lords. Hearings of the Economic Affairs Committee. https://publications.parliament.uk/pa/ld5802/ldselect/ldeconaf/42/4202.htm. Accessed 6 July 2023.
Fligstein, N., Brundage, J.S., and Schultz, M. (2017) Seeing like the Fed: Culture, cognition, and framing in the failure to anticipate the financial crisis of 2008. *American Sociological Review*, 82(5): 879–909.
Flinders, M. and Buller, J. (2006) Depoliticisation: Principles, tactics and tools. *British Politics*, 1(3): 293–318.
Fourcade, M. (2006) The construction of a global profession: The transnationalization of economics. *American Journal of Sociology*, 112(1): 145–194.
Froud, J., Nilsson, A., Moran, M., and Williams, K. (2012) Stories and interests in finance: Agendas of governance before and after the financial crisis. *Governance*, 25(1): 35–59.
Funtowicz, S. and Ravetz, J. (2018) Post-normal science. In: Proctor, J.D., Hulme, M., and Castree, N. (eds.) *Companion to Environmental Studies*. London: Routledge, 443–447.
Georgakakis, D. and Lebaron, F. (2018) Yanis (Varoufakis), the Minotaur, and the field of Eurocracy. *Historical Social Research*, 43(3): 216–247.
Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P., and Trow, M. (1994) *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*. Thousand Oaks, CA: SAGE Publications.
Gieryn, T.F. (1983) Boundary-work and the demarcation of science from non-science: Strains and interests in professional ideologies of scientists. *American Sociological Review*, 48(6): 781.
Goffman, E. (1956) *The Presentation of Self in Everyday Life*. London: Routledge.
Goodfriend, M. and King, R. (1997) The new neoclassical synthesis and the role of monetary policy. *NBER Macroeconomics Annual*, 12: 231–296.
Goutsmedt, A. (2021) From the Stagflation to the Great Inflation: Explaining the US economy of the 1970s. *Revue d'Economie Politique*, 131(3): 557–582.
Goutsmedt, A., Sergi, F., Cherrier, B., Claveau, F., Fontan, C., and Acosta, J. (2024) To change or not to change: The evolution of forecasting models at the Bank of England. *Journal of Economic Methodology*. https://doi.org/10.1080/1350178X.2024.2303113.
Goutsmedt, A., Sergi, F., Claveau, F., and Fontan, C. (2025) Not a steamroller, a 3D process: Scientization at the Bank of England. *Finance and Society*, 11(2).
Goutsmedt, A., and Truc, A. (2023) An independent European macroeconomics? A history of European macroeconomics through the lens of the *European Economic Review*. *European Economic Review*, 158: 104559.
Guston, D.H. (2001) Boundary organizations in environmental policy and science: An introduction. *Science, Technology, and Human Values*, 26(4): 399–408.
Guston, D.H. (1999) Stabilizing the boundary between US politics and science:: The role of the Office of Technology Transfer as a boundary organization. *Social Studies of Science*, 29(1): 87–111.

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

Haas, P.M. (1992) Introduction: Epistemic communities and international policy coordination. *International Organization*, 46(1): 1–35.
Hall, P.A. and Taylor, R.C.R. (1996) Political science and the three new institutionalisms. *Political Studies*, 44(5): 936–957.
Hammond, G. (2012) *State of the Art of Inflation Targeting*. London: Centre for Central Banking Studies, Bank of England.
Hoppe, R. (1999) Policy analysis, science and politics: From 'speaking truth to power' to 'making sense together'. *Science and Public Policy*, 26(3): 201–210.
Hoppe, R. (2005) Rethinking the science-policy nexus: From knowledge utilization and science technology studies to types of boundary arrangements. *Poiesis and Praxis*, 3(3): 199–215.
Hoppe, R., Wesselink, A., and Cairns, R. (2013) Lost in the problem: The role of boundary organisations in the governance of climate change. *Wiley Interdisciplinary Reviews: Climate Change*, 4(4): 283–300.
Inman, P. (2023) Greedflation: Corporate profiteering 'significantly' boosted global prices, study shows. *The Guardian*, 7 December. https://www.theguardian.com/business/2023/dec/07/greedflation-corporate-profiteering-boosted-global-prices-study. Accessed 17 October 2024.
Jasanoff, S. (1990) *The Fifth Branch: Science Advisers as Policymakers*. Cambridge, MA: Harvard University Press.
Johnson, J. (2016) *Priests of Prosperity: How Central Bankers Transformed the Postcommunist World*. Ithaca, NY: Cornell University Press.
Knorr-Cetina, K. (1999) *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge, MA: Harvard University Press.
Kranke, M. (2022) Exclusive expertise: The boundary work of international organizations. *Review of International Political Economy*, 29: 453–476.
Krippner, G.R. (2011) *Capitalizing on Crisis: The Political Origins of the Rise of Finance*. Cambridge, MA: Harvard University Press.
Marcussen, M. (2006) Institutional transformation? The scientization of central banking as a case study. In: Christensen, T. and Lægreid, P. (eds.) *Autonomy and Regulation: Coping with Agencies in the Modern State*. Cheltenham: Edward Elgar, 81–109.
Marcussen, M. (2011) Scientization. In: Christensen, T. and Lægreid, P. (eds.) *The Ashgate Research Companion to New Public Management*. London: Routledge, 321–334.
Marcussen, M. (2009) Scientization of central banking: The politics of a-politicization. In: Dyson, K. and Marcussen, M. (eds.) Central Banks in the Age of Euro. Oxford: Oxford University Press, 373–390.
McNamara, K. (2002) Rational fictions: Central bank independence and the social logic of delegation. *West European Politics*, 25(1): 47–76.
Mehrling, P. (2010) *The New Lombard Street: How the Fed Became the Dealer of Last Resort*. Princeton, NJ: Princeton University Press.
Meyer, J.W. and Rowan, B. (1977) Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2): 340–363.
Miller, C. (2001) Hybrid management: Boundary organizations, science policy, and environmental governance in the climate regime. *Science, Technology, and Human Values*, 26(4): 478–500.
Morgan, M. and Butter, F. (eds.) (2003) *Empirical Models and Policy Making: Interaction and Institutions*. London: Routledge.
Moschella, M. (2024) *Unexpected Revolutionaries: How Central Banks Made and Unmade Economic Orthodoxy*. Ithaca, NY: Cornell University Press.
Moschella, M. and Diodati, N.M. (2020) Does politics drive conflict in central banks' committees? Lifting the veil on the European Central Bank consensus. *European Union Politics*, 21(2): 183–203.
Mudge, S.L. (2015) Explaining political tunnel vision: Politics and economics in crisis-ridden Europe, then and now. *European Journal of Sociology*, 56(1): 63–91.
Mudge, S.L. and Vauchez, A. (2016) Fielding supranationalism: The European Central Bank as a field effect. *The Sociological Review*, 64(2): 146–169.
Mudge, S.L. and Vauchez, A. (2018) Too embedded to fail. *Historical Social Research*, 43(3): 248–273.
Plassard, R. (2020) Making a breach: The incorporation of agent-based models into the Bank of England's toolkit. GREDEG Working Paper No. 30. https://ideas.repec.org/p/gre/wpaper/2020-30.html. Accessed 25 March 2025.
Rancan, A. (2021) Econometric modelling in Italy: From economic planning to academic research. *History of Economic Thought and Policy*, 1: 63–82.
Rancan, A. and Sergi, F. (2024) *Modelling Europe: A History of Multi-country Models at the European Commission, 1970-2005*. Cham: Palgrave Macmillan.
Rautalin, M., Syväterä, J., and Vento, E. (2021) International organizations establishing their scientific authority: Periodizing the legitimation of policy advice by the OECD. *International Sociology*, 36(1): 3–24.

https://doi.org/10.1017/fas.2025.7 Published online by Cambridge University Press

Schmidt-Wellenburg, C. (2017) Europeanisation, stateness, and professions: What role do economic expertise and economic experts play in European political integration? *European Journal of Cultural and Political Sociology*, 4(4): 430–456.

Schofer, E. and Meyer, J.W. (2005) The worldwide expansion of higher education in the twentieth century. *American Sociological Review*, 70(6): 898–920.

Sergi, F. (2020) The standard narrative about DSGE models in central banks' technical reports. *The European Journal of the History of Economic Thought*, 27(2): 163–193.

Singleton, J. (2010) *Central Banking in the Twentieth Century*. Cambridge: Cambridge University Press.

Tett, G. (2015) *The Silo Effect: The Peril of Expertise and the Promise of Breaking Down Barriers*. New York: Simon and Schuster.

Thiemann, M. (2022) Growth at risk: Boundary walkers, stylized facts and the legitimacy of countercyclical interventions. *Economy and Society*, 51(4): 630–654.

Thiemann, M. (2024) *Taming the Cycles of Finance? Central Banks and the Macro-Prudential Shift in Financial Regulation*. Cambridge: Cambridge University Press.

Thiemann, M. and Lepoutre, J. (2017) Stitched on the edge: Rule evasion, embedded regulators, and the evolution of markets. *American Journal of Sociology*, 122(6): 1775–1821.

Thiemann, M., Melches, C.R., and Ibrocevic, E. (2021) Measuring and mitigating systemic risks: How the forging of new alliances between central bank and academic economists legitimize the transnational macroprudential agenda. *Review of International Political Economy*, 28(6): 1433–1458.

Thiemann, M. and Priester, S. (2024) Bridging the gaping hole: Central bank economists' role in the rise of macro-finance post-crisis. *European Journal of Sociology*, 65(1): 103–145.

van't Klooster, J. (2022) The politics of the ECB's market-based approach to government debt. *Socio-Economic Review*, 21(2): 1013–1123.

van't Klooster, J. and Fontan, C. (2020) The myth of market neutrality: A comparative study of the European Central Bank's and the Swiss National Bank's corporate security purchases. *New Political Economy*, 25(6): 865–879.

Wansleben, L. (2018) How expectations became governable: Institutional change and the performative power of central banks. *Theory and Society*, 47(6): 773–803.

Wansleben, L. (2024) Introducing *The Rise of Central Banks*. *Finance and Society*, 10(1): 51–58.

Wansleben, L. (2022) *The Rise of Central Banks: State Power in Financial Capitalism*. Cambridge, MA: Harvard University Press.

Wasserfallen, F. (2019) Global diffusion, policy flexibility, and inflation targeting. *International Interactions*, 45(4): 617–637.

Weingart, P. (1997) From 'Finalization' to 'Mode 2': Old wine in new bottles? *Social Science Information*, 36(4): 591–613.

Weingart, P. (1999) Scientific expertise and political accountability: Paradoxes of science in politics. *Science and Public Policy*, 26(3): 151–161.

Zapp, M. (2021) The authority of science and the legitimacy of international organisations: OECD, UNESCO and World Bank in global education governance. *Compare: A Journal of Comparative and International Education*, 51(7): 1022–1041.

Zapp, M. (2018) The scientization of the world polity: International organizations and the production of scientific knowledge, 1950–2015. *International Sociology*, 33(1): 3–26.

Ziman, J.M. (1996) Postacademic Science: Constructing knowledge with networks and norms. *Science and Technology Studies*, 9(1): 67–80.

Zingales, L. (2013) Preventing economists' capture. In: Carpenter, D. and Moss, D. (eds.) *Preventing Regulatory Capture: Special Interest Influence and How to Limit it*. Cambridge: Cambridge University Press, 124–151.

Cite this article: Goutsmedt, A. and Sergi, F. (2025) Redefining scientization: Central banks between science and politics. *Finance and Society*. https://doi.org/10.1017/fas.2025.7