Finance and Society (2025), 1–23
doi:10.1017/fas.2025.8

CAMBRIDGE UNIVERSITY PRESS

ARTICLE

Not a steamroller, a 3D process: Scientization at the Bank of England

Aurélien Goutsmedt[1,2], Francesco Sergi[3], François Claveau[4] and Clément Fontan[1]

[1]ISPOLE, UCLouvain, Louvain-la-Neuve, Belgium, [2]ICHEC Brussels Management School, Brussels, Belgium, [3]LIPHA Paris-Est, Université Paris-Est Créteil, France and [4]Université de Sherbrooke, Québec, Canada

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

Abstract

This article investigates the scientization process in central banks, using the Bank of England (BoE) as a case study. Its main goal is to clarify the interactions and tensions among three dimensions of scientization: contributory, policymaking and legitimizing. To do so, we outline an ideal type of *contributory scientization* in central banks, whereby they become active contributors to science. The article derives empirically observable characteristics for this ideal type, regarding leadership and staff profiles, use of internal resources, composition of external networks, and publication and discursive outputs. The BoE is then contrasted to this ideal type of a central bank thoroughly involved in *contributory scientization*. The empirical material includes archives and interviews as well as three databases providing quantitative information from the 1970s to 2019. We find that the development of *contributory scientization* is strategically motivated, often generating tensions with *policymaking* and *legitimizing* dimensions. Our findings suggest that scientization in central banks is best understood as a three-dimensional, non-linear process, rather than a steamroller.

Keywords: central banking; expertise; political economy; scientization; word embeddings

Introduction

On February 25, 2015, the Bank of England (BoE or 'the Bank' hereafter) organized an event for Bank representatives and 'external experts'. This gathering launched the BoE's 'One Bank Research Agenda'.[1] For the first time in its long history, the Bank publicly outlined a research strategy. This strategy entailed a list of priority areas for staff research and the creation of the Research Hub, an internal structure dedicated to producing scientific contributions. For the new Governor, Mark Carney (2015: 2), this would 'transform the way research is done at the Bank and 'cultivate an extensive research community that spans the Bank and beyond'.

At first sight, this recent evolution of the BoE resembles what Mudge and Vauchez (2018: 249) characterize as a 'broad shift in central bank organizations towards acting more like scientific or academic research centers, and less like public, political, or government institutions'. More generally, many authors have underlined that central banks have been experiencing a process of scientization, which has propelled them along this trajectory and shaped them into a more uniform structure, akin to the effect of a steamroller (Marcussen, 2006; 2009; Rosenhek, 2013; Golub, Kaya, and Reay, 2015; Mudge and Vauchez, 2016;

Schmidt-Wellenburg, 2017; Claveau and Dion, 2018; Van't Klooster and Fontan, 2020; Thiemann, Melches, and Ibrocevic, 2021). However, as Goutsmedt and Sergi (2025) argue in the introduction to this special issue, the notion of scientization conflates distinct practices and organizational features, which are entangled in the existing literature.

Against this background, we delineate scientization along three dimensions. First, *policymaking scientization* involves the growing reliance on scientific knowledge and expertise to achieve policy objectives. Modern central bankers are often professional economists with high levels of expertise (Singleton, 2011) and policymaking depends on complex scientific tools, such as forecasting or stress test models. This refers to the 'instrumental utilization' of science (Weingart, 1999). Second, *contributory scientization* describes the trend of central banks becoming producers of scientific knowledge. This aligns with Collins and Evans's (2002: 254) concept of 'contributory expertise', referring to experts who possess 'enough expertise to contribute to the science of the field being analyzed'. Third, *legitimizing scientization* refers to the use of scientization as a strategy to justify policy decisions with technical rationality. This relates to the 'legitimating' (Weingart, 1999) or 'symbolic utilization' (Amara, Ouimet, and Landry, 2004) of science, which is typical of regulatory agencies (Carpenter, 2010).

The main goal of this article is to clarify the interactions and tensions between these three dimensions of scientization. To do so, we outline an ideal type of *contributory scientization* in central banks, and then contrast this ideal type with an empirical analysis of the roles of science at the BoE. Doing so brings nuance to some claims in the existing literature. Indeed, the literature used a few indicators to provide empirical evidence for the scientization process: e.g., the publication of academic articles, strategies to publish in high-ranking journals, the presence of research departments and the organization of seminars and conferences (Marcussen, 2006; 2009; Mudge and Vauchez, 2016). Yet, these indicators remain ambiguous and do not necessarily mean that all central banks are transforming into research centers, as hinted at by Mudge and Vauchez (2018).

What is the purpose of using an ideal type? As elaborated in the next section, comparing these indicators with the ideal type's exaggerated claims of contributory scientization allows us to interpret the data in a new light and, thus, to refine our understanding of the interactions and tensions among the three different dimensions of scientization. For instance, the proportion of hired PhDs has increased dramatically in central banks, but these highly skilled workers are not necessarily incentivized to make scientific contributions, which would strengthen contributory scientization. Instead, new modeling and forecasting tools used in daily policymaking has created a demand for greater technical expertise within the BOE staff. Thus, the increasing number of PhDs may rather reflect a trend toward enhanced policymaking scientization.

In the next section, we argue for the use of an ideal type in our research design and outline four exaggerated empirical expectations regarding contributory scientization. We then detail our case study methodology, which employs a convergent mixed method research design. This design combines quantitative analysis from three databases with qualitative data from archives and interviews. After this, we compare the Bank of England (BoE) with our ideal type, presenting our quantitative findings first and subsequently integrating these with qualitative insights.

This comparison leads us to the main research finding of this article: scientization is not a steamroller, molding all central banks under the same shape. Thinking about scientization in three dimensions shows that contributing to science is a deliberate and contingent strategy, which is constantly adapted to other priorities, such as maintaining organizational legitimacy and managing the resources dedicated to urgent policymaking.

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

Defining scientization

In this section, we demonstrate that the existing literature conflates three distinct dimensions of scientization: *policymaking*, *contributory*, and *legitimizing* scientization. We then detail the rationale and methodology behind constructing an ideal type of contributory scientization. Finally, we highlight four exaggerated features that characterize this ideal type. When introducing the concept of central banks' scientization, authors typically refer to a few contributions by Marcussen in the 2000s. However, these authors do not explain whether their use of the term conforms to Marcussen's concept (see Goutsmedt and Sergi, 2025). In fact, making this assessment would be difficult because Marcussen's contributions do not maintain a stable definition of scientization.

Marcussen (2006) defines scientization as the transition from *applying* scientific methods (what we call *policymaking scientization*) to *producing* scientific methods and theories (*contributory scientization*). This understanding of scientization is consistent with part of the literature that followed: Dietsch, Claveau, and Fontan (2018) and Schmidt-Wellenburg (2017) claim that the influence of central banks inside the academic community has steadily grown, while Thiemann et al. (2021) and Thiemann and Priester (2024) show that when central banks gained macroprudential competences, they also became major producers of scientific knowledge on the topic.

However, the emphasis is elsewhere in a later piece by Marcussen (2009). He explicitly dismisses that what is happening in central banks is a 'genuine science', presenting it instead as 'essentially an ideology or dogma presented in the guise of science' (Marcussen, 2009: 377, citing Gregory, 2007). Here, the process of scientization is thus a matter of the increasing mastery of 'scientific techno-speak', that is, *legitimizing scientization*.

There are two characteristics that Marcussen systematically associates with scientization. First, a scientized central bank is not only operationally independent from government (i.e., the de-politicization of the 1990s), it is 'immune to political argumentation' altogether – i.e., 'a-politicized' (Marcussen, 2009: 389). He goes as far as claiming that 'we should imagine political issues that have obtained a status akin to a law in physics' (Marcussen, 2011: 329). More precisely, scientization would lead to a-politicization because the acquisition of scientific legitimacy and authority by central bankers is supposed to shelter their policymaking from outside criticism (Trondal and Jeppesen, 2008: 422; Abolafia, 2012: 3; Coombs and Thiemann, 2022: 14–5). For example, Mudge and Vauchez (2018: 248) claim that the scientization of the ECB follows a strategy 'to operate at a distance from both domestic politics and Brussels-based inter-state bargaining'.

Second, scientization is presented as a linear process, which is tightly associated with Max Weber's concept of rationalization, that is, the overarching historical progression towards a growing dependence of organizations on standardized and quantifiable rules. Marcussen (2009) characterizes this process as a 'fifth age' of central banking, marked by features such as scientization and inflation targeting, moving forward like a steamroller.

For the purpose of this article, we retain Marcussen's original use of the term and build an ideal type of scientization as the growing willingness of a central bank to *contribute* to the relevant science. The claim that central banks have turned into research centers is plausibly the most striking generalization in this literature, often underlying larger claims about central banks' scientific legitimacy, so it merits careful conceptual and empirical scrutiny.

Operationalizing our research with an ideal type of contributory scientization helps to overcome an exploratory challenge and to reach a heuristic goal (Swedberg, 2018). To start with, relying on ideal types is a 'safe haven' when researchers gather empirical facts that are difficult to interpret because of a lack of extensive pre-existing knowledge on the topic.

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

The example of the PhD hires presented in the introduction illustrates this well. Moreover, variations between the ideal type and the case under study has a heuristic function as it helps to produce knowledge on the topic. For example, the literature on scientization indicates a linear evolution. Yet, the contrast between our ideal type and the BoE case unexpectedly shows that scientization comes with ebbs and flows.

The use of ideal types in social sciences follows two steps. First, the ideal type should be composed of exaggerated and indispensable elements, as built iteratively through researchers' mental experiment (Gerhardt, 1994: 87–9). Second, the ideal type is confronted with empirical evidence, by tracking differences between empirical facts and ideal-typical features.

What does it entail for a central bank to be scientized from the 1990s onwards? We submit that four features encapsulate the ideal type of a central bank contributing to science.

First, *leadership and staff profiles* must fit certain standards if 'central bankers consider themselves, and are considered to be scientists' (Marcussen, 2006, Table 3.1). The typical contemporary scientist has a PhD. So scientized central banks should have a historically high level of employees with PhDs (Lebaron and Dogan, 2016; Georgakakis and Lebaron, 2018). Yet, only observing the sheer number of PhDs is not sufficient to conform to contributory scientization. With the normalization of graduate studies and the growing level of required specialized skills needed to operate scientific tools (such as macroeconomic models or econometric techniques), having a PhD does not entail being an active contributor to science. A more reliable indicator of being a scientific contributor is a career trajectory involving academic positions before and after one's time in the organization, or simultaneous affiliation to academia.

Second, scientized central banks channel *internal resources* to promote research that aims at advancing the scientific conversation (Mudge and Vauchez, 2016). Accordingly, scientific contributions should be encouraged with means such as dedicated time for undirected research, publication of working paper series, regular workshops and programs for visiting researchers.

Third, researchers from a scientized central bank have an *external network* composed principally of other contributors to the relevant scientific fields (Maman and Rosenhek, 2012: 320, 326; Baker, 2015: 356; Mudge, 2015: 77; Wansleben, 2022: 7, 41). Those typically have academic positions or a job in another scientized organization. Furthermore, the network of researchers in a scientized central bank should be distinctively international. This mirrors the dynamics observed in economics (the main field of training for the central bank workforce): since the 1970s, economics has undergone an internationalization process (Coats, 1996), with the emergence of common scientific and professional standards, making economics a global profession (Fourcade, 2006; Harrington and Seabrooke, 2020; Heilbron and Gingras, 2018).

Fourth, the *publication and discursive outputs* of a scientized central bank should have distinctive characteristics. Central bankers should strive to produce *en masse* the paradigmatic support of a scientific contribution: the peer-reviewed journal article (Claveau and Dion, 2018). A thoroughly scientized organization also talks the language of science: speeches from its representatives should include references to scientific contributions and terminology. This characteristic of speeches is akin to the 'scientific techno-speak' identified by Marcussen (2009), but without the presumption that it is a mere symbolic use of science, as 'talking the talk without walking the walk' (Marcussen, 2011: 322).

These characteristics constitute what it is to be an ideal-typical case of a contributory scientized central bank. They also suggest empirical indicators of contributory scientization.

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

Sources and methods

This article relies on an in-depth study of the roles of science at the BoE using a convergent mixed methods design (Creswell and Clark, 2017). Quantitative and qualitative data were simultaneously collected, and they are jointly used to characterize the hesitant path of the BoE toward contributory scientization.

Our quantitative analysis uses three databases. First, our database of gray literature is composed of 4545 documents published by the BoE on its website. The period covered is 1972 to 2019. We extensively use two types of documents from this database: the research documents (n=1415) and the speeches (n=1311). Second, our prosopographic database contains information from public sources about the professional profiles of 368 BoE economists and 60 individuals in leadership positions. The inclusion criteria for the economists are to have (co-)authored at least one BoE research document before 1993 or at least three over the full period.[2] BoE leadership is made of the Governors, Deputy Governors, Executive Directors, and, from 1997 onward, members of the Monetary Policy Committee (MPC). Third, we use Web of Science as a database of published scientific papers. We focus on articles that are signed by at least one affiliate of a central bank (based on the organization or email address associated with an author in the database).[3]

Our method to analyze these databases is to construct descriptive statistics such as frequencies or proportions of some characteristics, mostly in time series format. Most statistics are created by simply counting elements in one database. Other statistics are constructed by combining our databases using information retrieval techniques. More specifically, we compute the number of mentions of research documents in speeches by matching the references detected in the latter with our databases of gray literature and of scientific journals.

Furthermore, a last set of descriptive statistics on speeches are generated by using a measure of semantic proximity from natural language processing. As a first step to our procedure, we use a pre-trained neural word embedding model. A word embedding model represents each word as a dense vector in numerous dimensions (300 dimensions in our case), and similarity measures between two word-vectors provide a quantitative indicator of the semantic proximity between the two corresponding words (Rodriguez and Spirling, 2022). Neural word embedding models need to be trained on a very large but appropriate corpus. We thus use a model pre-trained on a corpus of 23,000 documents from 130 central banks by Zahner and Baumgartner (2023). We create two lexical indices: one representing more technical empirical rhetoric, the 'econometrics index' (with words like 'econometrics', 'regression' or 'time series'), and another representing more theoretical content, the 'macroeconomics index' ('rational expectations', 'new Keynesian', 'natural rate') – see Table 1. We then applied the method developed by Arora, Liang, and Ma (2017) and Ash, Chen, and Naidu (2022) to compute the proximity between these specific lexical fields and each paragraph of the BoE speeches, allowing us to observe the level of technicality in the speeches.[4]

These quantitative results are combined with our qualitative material, which includes 23 semi-structured interviews with former and current staff and policymakers at the BoE, as well as the Bank's archives (including notably internal report and correspondence) and published documents (including research articles, reports, and media coverage of the Bank activities).[5] This qualitative material provides evidence about the changing role and place of economic research within the Bank over six decades – as documented, at length and from a historical perspective, in Acosta et al. (2024).

Although we have processed qualitative and quantitative material simultaneously (at the stages of both data collection and analysis), we first present the quantitative results in isolation in the next section. In our opinion, this expository choice makes it easier for

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

Table 1. Summary of the lexical fields used to detect scientific language in speeches.

Lexical fields	Vocabulary searched (using regular expressions)
Macroeconomics index	Rational expectations; DSGE; general equilibrium; microfoundations; New Keynesian; natural rate; Euler; intertemporal; optimization
Econometrics index	Econometrics; econometric; estimation; output gap; lagged; regression; time series

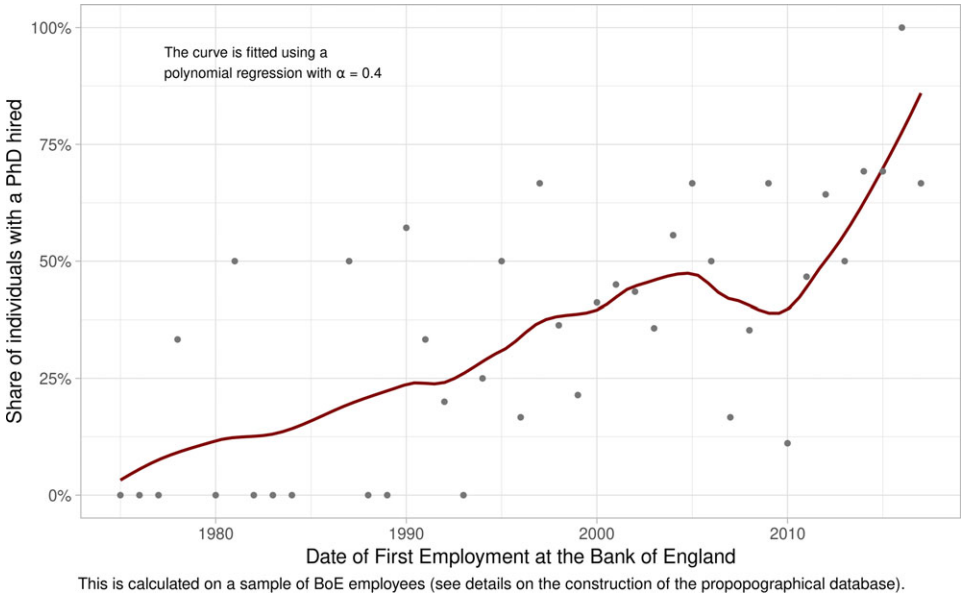

Figure 1. Share of hired PhDs.

readers to appreciate the following section, where our discussion integrates both quantitative and qualitative material (Creswell and Clark, 2017: Chapter 7).

Quantitative indicators of scientization

This section presents the main quantitative results along three dimensions: (i) the characteristics of policymakers and of the economic staff within the BoE; (ii) the features of research publications; (iii) the place for 'science' in central bankers' speeches.

Prosopographic analysis of BoE profiles

Our prosopographic analysis looks at the professional characteristics and experiences of BoE leadership and research staff. We rely on two career indicators: last diploma when joining the Bank and professional experience prior to and after working for the Bank (i.e., *ex ante* and *ex post* employment).

A first result stemming from our prosopographical analysis is the increasing proportion of research employees hired at the Bank who hold a PhD (Figure 1). This rise began in the early 1990s; the proportion stabilized in the early 2000s, and then it accelerated again from 2010 onwards. Based on the location of the last degree, internationalization has increased

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

Table 2. Ratio of individuals with a PhD diploma in leadership positions at the Bank of England.

Period	Ratio of PhDs	In %
1940-1969	1/8	12.5%
1970s	0/6	0%
1980s	3/13	23.1%
1990s	9/14	64.3%
2000s	6/12	50%
2010s	5/9	55.6%

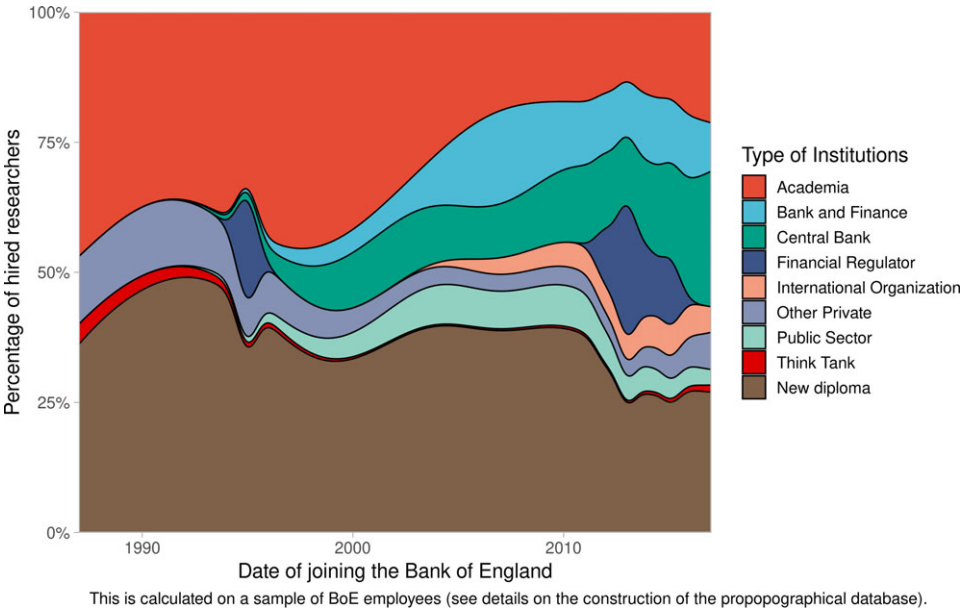

Figure 2. Last employment of research staff when arriving at the Bank of England.

since the late 1980s, with an increasing share of BoE researchers educated in continental Europe or North America. Yet, those having UK diplomas remained the majority until recently (OA, Figure 1). The profiles of the Bank leadership display similar temporal patterns in terms of level of education (see Table 2), albeit with a higher share of UK diplomas (OA, Table 1).

The *ex ante* and *ex post* employment of our staff sample further enriches the picture. Before the mid-1990s, individuals with an academic position before joining the Bank constituted the largest group (Figure 2). However, after this date, the share of this group declined.[6] Academic hires were substituted by staff coming from other central banks and international organizations: in recent years, these groups represent around a third of the researchers entering the BoE.[7] The trend is less pronounced among those departing the Bank. Over the period of our analysis, approximately one quarter of departing BoE employees secured positions in academia, although there was a slight decrease in the number of BoE employees joining an academic institution around the financial crisis (OA, Figure 2). The proportion is similar for departures to other central banks or international

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

Table 3. Ex ante leadership positions.

Type of position	1970s	1980s	1990s	2000s	2010s	Total
Academic	3	1	6	7	2	19
Central banks	0	0	0	1	1	2
Finance companies	2	1	3	2	5	13
Financial regulator	0	0	1	1	0	2
International organization	2	0	1	0	2	5
Other private sector	1	0	3	4	1	9
Public sector abroad	0	0	1	0	2	3
UK public	4	0	1	3	2	10
UK public sector	1	0	0	0	0	1
Total	13	2	16	18	15	64

Table 4. Ex ante positions of external MPC members, 1997-2019.

Type of position	Number of individuals	In %
Academic	10	43.5%
Finance companies	6	26.1%
Other private sector	5	21.7%
UK public	3	13%
International organization	2	8.7%
Central banks	1	4.3%
Public sector abroad	1	4.3%

Note: Individuals may have occupied different types of position before joining the Bank. In this case, we count every type of position as 1. Thus, the sum of positions is greater than the number of individuals in this period in our database.

organizations. Finally, the private sector, especially financial firms, provides job opportunities for around one fourth of employees leaving the Bank.

The BoE leadership displays a different pattern than the staff. A long career within the Bank (or in other UK public institutions) remains the norm for finding one's way up the ladder. For those who had built a career outside the Bank, their employment had been mostly UK-based, either for large British corporations or for the UK affiliates of multinational banks (see also Table 3). Academic careers prior to joining the Bank (which characterize a large proportion of external MPC members; see Table 4) are more international than non-academic profiles.[8] Finally, *ex ante* careers in other central banks or international organizations are overall much less common among BoE leadership than among BoE staff (Figure 2 and Table 3).

Publishing practices

We analyze three types of research publications: the articles from the BoE's different working papers series; the research articles appearing in the Bank's *Quarterly Bulletin*; and the articles published in peer-reviewed journals by at least one BoE-affiliated author.

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

Table 5. Average proportion of publications by central banks in academic journals.

Years	Bank-Canada	Bank-England	Bank-France	Bank-Italy	Bundesbank	ECB	FED
1980-1984	2.5%	1.5%	0.1%	1.2%	0.3%	NA	66.5%
1985-1989	0.7%	2.6%	1.1%	0.6%	0.3%	NA	64.8%
1990-1994	0.4%	2.7%	1%	1.4%	0.3%	NA	73.1%
1995-1999	0.7%	1.2%	0.4%	1.2%	0.2%	0.7%	73.8%
2000-2004	0.4%	2.7%	0.7%	1.9%	0.3%	3.2%	56.1%
2005-2009	1.1%	3%	0.7%	1.7%	1.3%	5.6%	44%
2010-2014	2.4%	1.4%	2.2%	2.4%	1.7%	7.9%	32.3%
2015-2019	2.9%	2.2%	3.2%	3.2%	3.7%	6.2%	30.7%

Note: See online appendix for details.

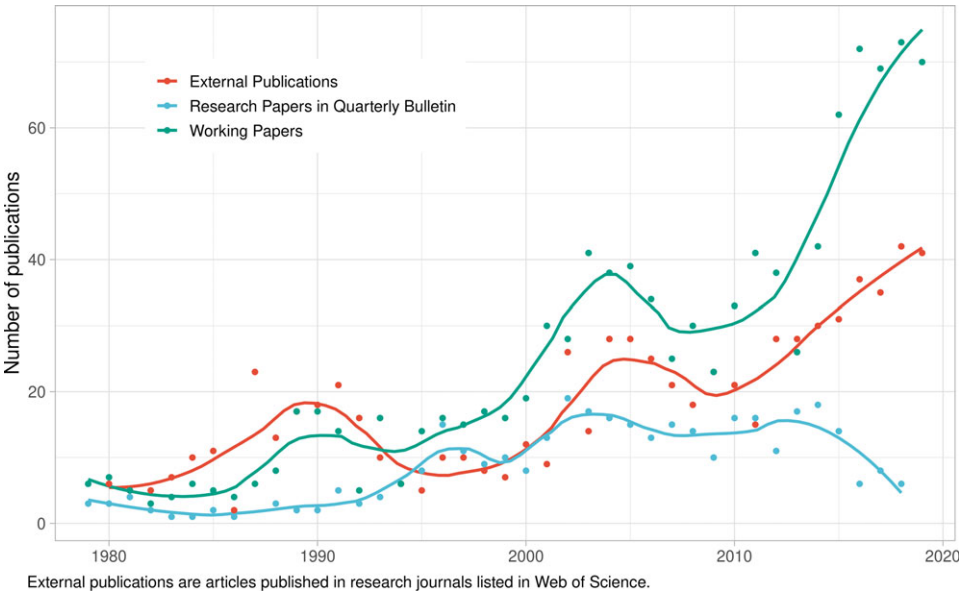

Figure 3. Publications by the Bank of England.

In the late 1980s and early 1990s, we observe that the BoE staff, outside of publishing relatively many working papers (Figure 3), published more in peer-reviewed journals than other central banks, excluding the Federal Reserve (Table 5). A significant part of these articles was published in the most prestigious US-based international journals in economics (the 'Top 5'). From the mid-1990s to the early 2000s, the number of BoE publications in peer-reviewed journals was relatively low compared to the previous period (Figure 3).

In the early 2000s, publication indicators were on the rise again: the number of working papers and articles published in peer-reviewed journals increased, and a larger share of articles was published in the Top 5, in comparison to other central banks (OA, Figure 4). Moreover, the BoE became (again) one of the most prolific central banks in terms of publications in all economic journals – although the recently established ECB was out of

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

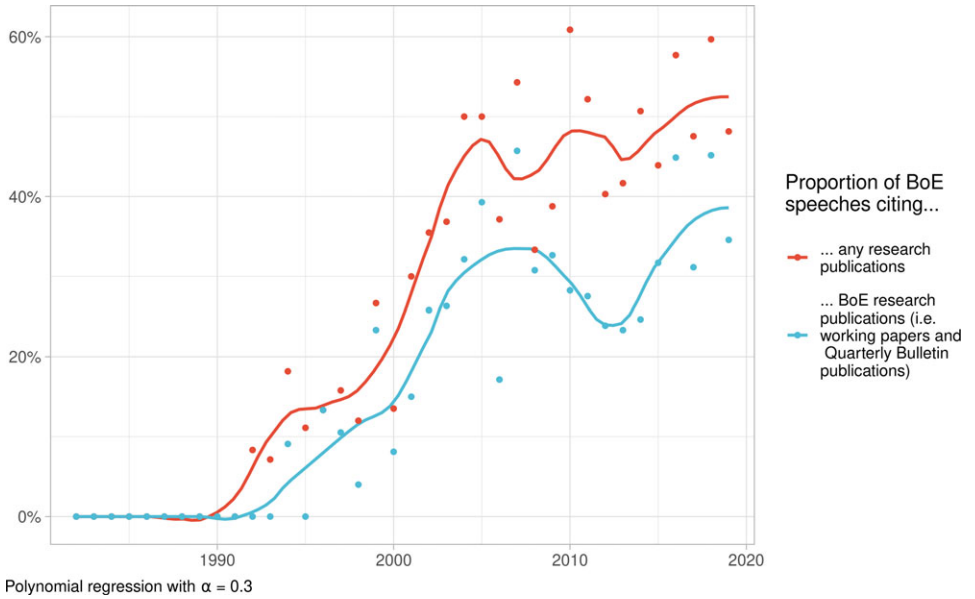

Figure 4. Proportion of BoE speeches with references to research publications.

reach (Table 5). We also observe a new trend: the proportion of peer-reviewed articles written with authors affiliated to non-UK institutions increased after the mid-2000s, overtaking collaborations with UK institutions (OA, Figure 5). While almost no peer-reviewed articles were co-authored with other central banks' authors before 2000, the proportion of such articles increased steadily thereafter.

However, with the Great Financial Crisis (GFC) of 2007-2009, the rhythm of publications decreased and then started to grow again with a large increase of the number of working papers after 2014.

Discursive practices

To investigate quantitatively the scientific dimension of BoE communication, we examine BoE leadership's speeches.

First, we consider the references made in speeches to articles published in research journals and to the publications of the Bank (i.e., staff working papers and articles published in the Bank's *Quarterly Bulletin*). This referencing indicator allows us to detect a formal use of academic codes, that is, a reference in a bibliography or in a footnote. Second, we build a lexical indicator that helps us to spot more informal ways of referring to science, consisting in mentioning concepts, theories, and the like in the main body of the text. Both sets of indicators are further disaggregated and sorted by the speaker's position within the Bank (Governor; Deputy Governor; MPC internal members; MPC external members), and by the speech's audience (finance and banking professionals; business sectors; other central bankers and international organizations; academics).[9]

Overall, since the 1990s, we observe an increase in the share of BoE speeches citing research (Figure 4). In the 1980s, there was a plain and simple absence of reference to any research work in speeches made by BoE leadership (for any role, and to any audience); conversely, in recent years, more than half of the speeches contain explicit mention to research publications. This trend is similar both for the citations of BoE research and for the citations of other articles in peer-reviewed journals.[10] Moreover, since the early 1990s,

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

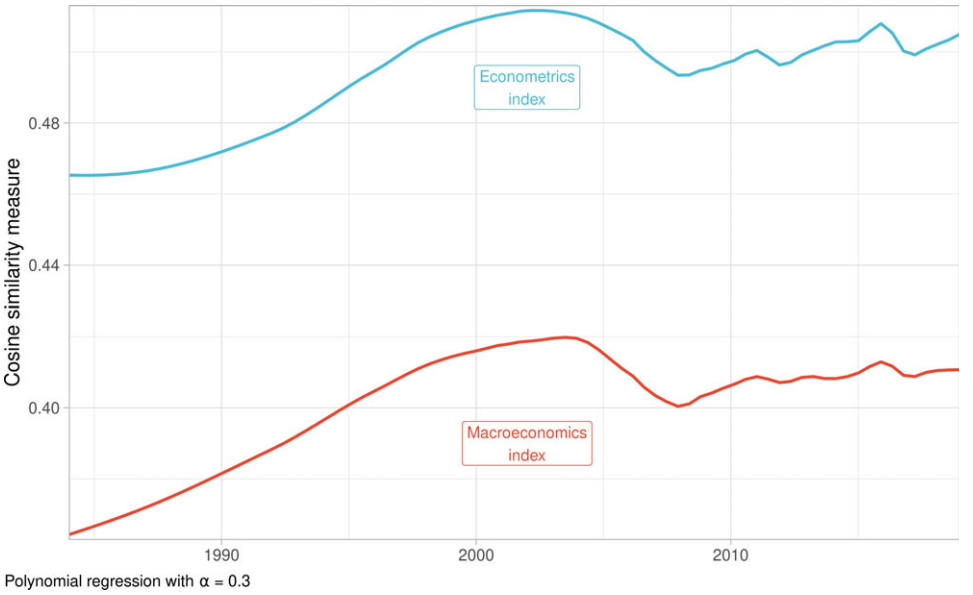

Figure 5. Evolution of language indices in BoE speeches.

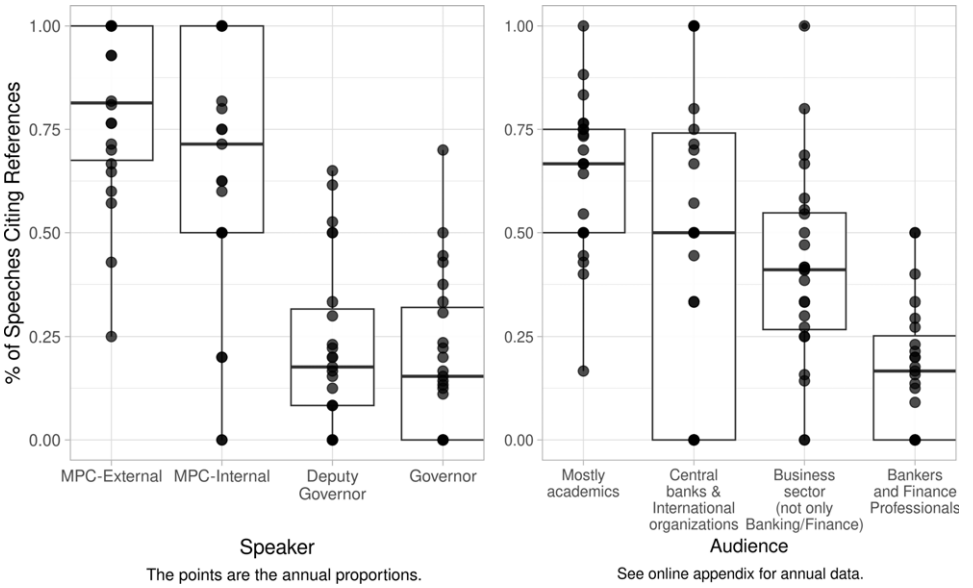

Figure 6. Distribution of annual proportions of speeches citing references, 1997-2019.

there is an increased lexical proximity between BoE speeches and language of 'macroeconomic theory' and 'econometrics' (Figure 5).

Speeches made by Governors display a slow rise of scientific references (see OA, Figure 7).[11] By contrast, speeches by members of the MPC (both internal and external) display on average a higher share of references to research (Figure 6). The results of our word embedding analysis confirm this pattern: when considering the proximity of speeches with

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

lexical fields, we observe that Governors are less likely to use the language of econometrics or macroeconomic theory (OA, Figures 9 and 10). In short, we observe, over the whole period, that the higher the position of the speaker, the less references to or mention of science. However, we can observe clearly the impact on our indicators of the arrival of Governors with a more significant background in economics: the first years of King's governorship and then those of Carney's are characterized by more references to scientific research and a discourse closer to scientific rhetoric.

The audience also matters. Over the studied period, the main audience of the Bank was the private business sector (OA, Figure 6). However, it appears that speeches addressed to this audience are much less likely to contain references to published research or to use a scientific language than in speeches addressed to academics and other central banks (right-hand panel of Figure 6 and OA, Figures 9 and 11).

Finally, with the GFC period, the ascending trends observed for the previous two decades stopped. The share of speeches citing scientific publications decreased, on average, during the crisis and its immediate aftermath. Similarly, the proximity with the lexical fields of 'econometrics' and 'macroeconomic theory' has significantly decreased.

Integrating quantitative and qualitative insights

The quantitative results of the previous section are already indicative of some differences between our ideal type and the BoE case. However, it is only by taking a fresh look at these results in combination with our qualitative material that we can have a thorough understanding of the tensions among policymaking scientization, contributory scientization, and legitimizing scientization.

Hybrid professional profiles

A necessary characteristic of contributory scientization is a specialized workforce actually able to contribute to the relevant science. Our data unambiguously indicate that this condition has been increasingly met by the BoE, with rising proportions of researchers and policymakers holding a PhD (see Figure 1 for researchers), most frequently in economics.[12] The BoE follows in this respect a global trend among central banks (Marcussen, 2009: 379; Lebaron and Dogan, 2016). This professionalization of central banks' staff is exemplified by the rising level of qualifications required according to BoE job advertisements, published in *The Economist* and other periodicals. For instance, before the mid-1990s, BoE job ads did not mention graduate studies as a job requirement. From the mid-1990s, these advertisements started indicating post-graduate studies in economics as a job requirement (see e.g., *The Economist*, May 20, 1995). Furthermore, in the 2010s, the Bank actively pursued the hiring of PhDs by developing two specific recruitment programs (see Bank of England, 2016: 18, 21).[13]

Another feature of our ideal type is the external network of the workforce. The increasing internationalization of the research staff at the BoE resulted from an explicit hiring strategy, decided in the mid-1990s. This strategy was notably supported by Mervyn King, then chief economist of the Bank: '[King] said we will not constrain ourselves to hire Britons and [that we will] open to the international market and to PhDs' (Interview, Charles Bean).[14] However, this internationalization was relatively slow: more than half of new BoE researchers were still UK-educated at the end of our period (OA, Figure 1). The prevalence of UK nationals is even stronger for BoE leadership. Looking at the professional trajectories of BoE staff, they remain diverse, with proportions of transitions from and to non-academic organizations that either increase or fluctuate without a clear trend (see Figure 2 and OA, Figure 2).

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

In short, there is some truth to saying that 'academia and central banking are forging ever closer links' (Marcussen, 2006: 93), especially because advanced specialized training has become an almost prerequisite for researchers and policymakers. However, the case of the BoE shows that, through time, professional links with academia can weaken in some respects (e.g., *ex ante* employment) or fluctuate with no clear direction in other respects (e.g., *ex post* employment). Indeed, the BoE maintains substantial links to other types of organizations – such as other central banks, international organizations, and financial firms. No steamroller of scientization is changing this fact. The BoE community – with ties to academia, finance, international organizations and the public sector – is part of a hybrid epistemic community, quite distant from the sociological characteristics that our ideal type of contributory scientization would entail.

The profiles of MPC external members further illustrate this hybridity. The 1998 Bank of England Act (Section 13-4) states that any person who 'has knowledge or experience which is likely to be relevant to the Committee's functions' is qualified to sit in the MPC. Knowledge is thus at par with experience. Indeed, professional experience in the private sector is the most frequent qualification for external MPC members, with fewer external members holding academic positions (Table 4). When looking at the career of external MPC members, we observe that most of them have been economists in large banks (Goldman Sachs, Deutsche Bank, Morgan Stanley, NatWest, Citigroup, ...), asset management funds, large UK corporations (British Petroleum, British Airways, ...), or the Confederation of British Industries (a fifth of the external MPC members served as economists there).[15] These observations are overall consistent with Lebaron and Dogan (2016), who distinguish four central bankers' profiles: 'academics', 'insiders', 'bureaucratic and political profiles', and 'private financiers'. The last two categories clearly do not belong to the epistemic community of academia, and they are not endangered species within the BoE.

Types of research output

We saw that the BoE has a growing army of PhDs, but we should not be too hasty in concluding that this trend necessarily translates into contributory scientization. Indeed, for much of the period, recruiting highly skilled economists was primarily justified by the need for policy analysis; thus, the indicator should be interpreted as a sign of policymaking scientization.

This need for technical skills was felt especially strongly starting in 1992, when the Bank was entrusted with the task of publishing the quarterly *Inflation Report* (James, 2020). The report had to present inflation forecasts and assess how monetary policy would achieve the recently established inflation target (Elgie and Thompson, 1998: 4). To fulfill this new objective, the Bank underwent a significant restructuring process (Acosta et al., 2024). During the internal debates regarding this reorganization, Mervyn King, the newly appointed Chief Economist, argued, in a memorandum titled 'The Analytical Functions [of the Bank]' addressed to the Deputy Governor:

> We require a high-powered team of economists who are familiar with the academic literature as well as the latest work in other central banks. Most of these people should have a PhD or equivalent qualification in economics. (King, 1993)

Moreover, King considered that, to perform its functions, the Bank had to adopt models that aligned with the prevailing standards of academic macroeconomics in the US (Goutsmedt et al., 2024). This change required economic PhDs, who could master advanced knowledge to build and use these models, but the primary aim was not to contribute to science. Rather, the principal objective lay in the practical application of these models for policy, a textbook case of policymaking scientization.

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

A further step in the development of research at the Bank was the transition to operational independence in 1997, and the consecutive creation of the MPC, whose mission was to take operational decisions (notably setting the Bank rate). Staff economists were swiftly integrated into MPC pre-meetings, where they provided statistical and econometric analysis (including model-based forecast), and analysis on specific topics commissioned by MPC members (Acosta et al., 2024). Highly skilled economists were needed, but primarily for policy analysis, not to contribute to economic science.[16] One of the former Executive Director of the Bank characterized as follows this tension between academic credentials and the pressing need for producing forecasts and analysis in the early days of the MPC:

> Now we have all of these smart economists publishing journal-quality papers that look like Harvard-MIT-Chicago economics; but, actually, we got no one that can do a forecast. (Interview, Executive 3).

A staff economist also recalls this prevailing tension experienced during the 2000s:

> [A]lthough there was always the tradition of hiring PhDs, they were not receiving any particular incentive to publish their own work. So, they will all do their policy work like everybody else. Probably they will deal more than others with the technical side of policy analysis. (Interview, staff economist 10)

In short, we see that, in this case, the level of qualification of researchers is not a particularly good indicator of contributory scientization. For most of our period, the Bank's leadership expected qualified economists to use their specialized skills predominantly for supporting internal policy work (policymaking scientization), and not for engaging with academic activities such as publications in peer-reviewed journals.

This state of affairs changed in 2014. Following a significant change in leadership, notably with the appointment of the new Governor Mark Carney, the Bank developed a 'Strategic Plan' which was intended to transform several aspects of the institution. This included the reorganization of research, with two explicit objectives: 'increase the Bank's external profile and influence' and 'inform policy development' (Bank of England Independent Evaluation Office, 2019).[17] With regards to these objectives, the Research Hub was created. BoE staff can apply internally for a short (six months) research leave to this new unit. During their time there, they can focus on their research, as they are relieved from their duties related to internal policy work. According to the staff, this reorganization contributed to clarify the distinction between policy analysis and (scientific) research:

> Now there is a fairly clear definition. We think of research as analytical output, which is primarily aimed at publication (externally). While 'policy analysis' is aimed at internal publication, and without being attributed to a particular researcher. So, we have a fairly clear definition, although in terms of content, policy analysis and research can be very close. (Interview, staff economist 10)

Audience and language

Marcussen posits that central bankers' communication is couched in a 'techno-speak', that is, the 'discourse of science'. In the new age of central banking, 'scientific breakthrough' has purportedly emerged as the 'major nodal points in central bank rhetoric', with central bankers primarily communicating through 'a common language: econometrics' (Marcussen, 2006: 85–6). It is undeniable that BoE officials have exhibited an increasing proclivity towards adopting the language of science. Recent speeches display a greater

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

proximity with the vocabulary associated with econometrics and macroeconomic theory (Figure 5).

Upon closer analysis of the BoE's communication practices, it becomes apparent that its leadership modulates the technical and scientific aspects of its language to cater to diverse audiences. Over the period under consideration, the Bank primarily oriented its official communications towards the private business sectors, without any notable increase in the proportion of speeches addressed to an academic audience (OA, Figure 6). Although scientists typically communicate primarily with their 'scientific peer groups' (Marcussen, 2006: Table 3.1), the BoE leadership did not exhibit this tendency. The reason should be obvious: according to the received view, 'the advantages of a sound monetary policy are largely dependent upon the policy's being *understood* and relied upon by the private sector in arranging its affairs'. (Woodford, 2003: 4) Consequently, BoE officials keep themselves busy by speaking before multiple audiences outside their supposed epistemic community.

Furthermore, speeches have a distinctive flavor depending on the audience. In general, the use of scientific references and terminology is less predominant when addressing a non-academic audience (Figure 6 and OA, Figure 9). This points to a reinterpretation of discursive strategies. When attempting to project credibility toward non-peers, central bankers do not double down on science speak. They go in exactly the opposite direction. In other words, although the language of science has permeated their epistemic community, BoE officials recognize that achieving their policy goals is not best served by cluttering their speeches with jargon and explicit reference to the scientific literature. This was eventually put forth by the Bank itself in an effort to simplify its communication with the public (Haldane and McMahon, 2018).

In sum, the contrast between the BoE and our ideal type illustrates that there are tensions between the legitimizing and contributory dimensions of the scientization process both in terms of who to speak to and how to speak to them.

The hesitant path of scientization

Following Marcussen's work, the literature depicts the scientization of central banks as being on a steady upward path. We have already noted that central banks face tradeoffs in their quest to become genuine contributors to the relevant science. Consequently, we should anticipate that the process of contributory scientization may not always be a forward progression. Depending on the central banks' response to the fluctuating challenges and advantages inherent in this endeavor, contributory scientization will sometimes experience regression. It is exactly what we find in the recent history of the BoE.

The evolution of scientific publications is arguably the most direct indicator of a central bank's contributory scientization. Scholars have compiled various characteristics such as the creation of working paper series, the number of working papers, the positions in RePEc rankings and the foundation of self-funded scientific journals (Marcussen, 2009: 379; Mudge and Vauchez, 2016: 157–8).[18] Yet, increasing publications and citations in peer-reviewed journals are probably the surest sign of contributory scientization (Claveau and Dion, 2018). In 1978, the BoE initiated its first working paper series, the *Bank of England Discussion Papers*, which was renamed *Staff Working Papers* in 1991.[19] The initial goal for this series was to facilitate 'wider circulation to research' deemed too 'exploratory' or 'technical' for publication in the *Quarterly Bulletin* (Threadgold, 1978: ii; Bank of England, 1979: 26). Until that point, the *Bulletin* had been the main BoE outlet for economic analysis produced within the Bank. A few years after the *Discussion Papers*, the *Technical Series* was introduced to 'give wider circulation to econometric research work predominantly in connection with revising and updating the various Bank models and to invite comment upon it' (Davis, 1982: i).

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

This early bout of contributory scientization corresponds to a specific momentum for economic research at the Bank. Under the leadership of Chief Economist John Flemming (1984-1991), the Bank developed substantially its research activities. During this period, the Bank considered it important that the economic staff displayed 'very serious technical expertise in econometrics' (Interview, staff economist 7). This technical proficiency played a twofold role. Firstly, this technical expertise contributed to the development of the Bank's macroeconometric forecasting model, which in turn provided scientific justifications for the Bank to resist political pressures from the Treasury (Goutsmedt et al., 2024: 4–9). Second, for this technical expertise to be deemed serious, the Bank decided to showcase it, for instance by supporting the publication costs of a working paper series. During this period, economic research remained relatively separated from policy routines (Acosta et al., 2024), which seems to have favorably positioned BoE researchers to make scientific contributions (see Figure 3 and Table 5).[20] More specifically, the BoE staff was internationally renowned in the field of econometrics, notably for their contribution to time series analysis and innovative techniques in estimating and simulating forward-looking macroeconometric models (Acosta et al., 2024). In short, the high level of research publications seems to reflect a deliberate strategy to promote contributory scientization in order to achieve legitimizing scientization, with scant progress in policymaking scientization in the period. Indeed, advanced econometric modeling did not inform policy at the Bank, but rather helped it in the credibility struggle with the Treasury.

This first phase came to an end in the early 1990s, with an especially marked drop for publications in peer-reviewed journals, despite the rise of hired PhDs. This reversal of the trend for scientific output reflects a reorientation of research efforts toward policy analysis – thus, the drop in publications *whilst* the level of qualification of the workforce increases (cf. supra) signals a prevalence of policymaking scientization. The view that research had to cater to the needs of the policy process was heralded by a few key Bank executives (notably Mervyn King, then Charles Bean). They considered as paramount that the Bank did not attempt to mimic academic publishing practices, which they considered as inappropriate with respect to the Bank's missions:

> [Research] should be embedded. That's good for the researchers, it pushes them to work on good topics and not on the problems of the self-referential literature. You want researchers to be exposed to the big questions of the policy makers, and you want the materials to do more conceptual stuff to be presented to the MPC. And it's good for those providing conjunctural analysis as it exposes them to up-to-date academic thinking. (Interview, Charles Bean)[21]

As a result, publishing in peer-reviewed journals was generally seen as 'an optional extra' to policy work, as recalled by a newly recruited PhD economist at the time:

> [Research in the 2000s] was more of a combination of 'we have done some policy analysis, let's turn that into a paper'. This was the way research was produced mostly. But you could also do research as an optional extra.[22] (Interview, staff economist 10)

Although indicators suggest that contributory scientization at the BoE was on the rise again in the early 2000s, the Great Financial Crisis (GFC) of 2007-2009 interrupted the process. In the aftermath of the crisis, reconfiguring policy analysis took precedence over publishing articles in scientific journals. As a former Executive recalls: 'Before the crisis, of course there was more time to do research. Then, obviously the urgency of the situation required to stop that'. (Interview, Executive 1)

This trend at the BoE during this period is at odds with other central banks, such as the ECB, where scientific publications increased during this period (OA, Figure 4; see also

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

Mudge and Vauchez, 2016). This divergence is probably the result of different organizational structures for research. The ECB devotes an entire administrative unit, with its own full-time staff, to scientific research. At the BoE, no such research department existed. As a staff economist during the crisis explains:

> The contrast with us [compared to other central banks] was that we should not have a research department, we should be embedded in the policy process. We were not here to have an appropriately funded research department. (Interview, staff economist 11)

At the BoE, the financial crisis did not only reverse the trend for scientific publications (Figure 3), it also impacted speeches. Indeed, we detect that, in the aftermath of the crisis, the BoE leadership had a smaller propensity to cite scientific research and to use scientific jargon in their speeches (see Figures 4 and 5). Since much was in flux in the world of central bankers at the time, many factors might explain this reduction in 'science speak', including the fact that economic science temporarily became a less reliable ally in the quest for credibility and policy effectiveness (see below for more on that).

To sum up this section, the recent history of the BoE teaches us that the process of contributory scientization sometimes goes in reverse and that this is related to a tension with the two other dimensions of scientization. In particular, depending on external circumstances, the internal organizational structure and the views of the leadership, a central bank can reallocate its resources between policy analysis and scientific research. In the 1990s, priority was given to policymaking scientization while legitimacy issues challenged the dynamics of contributory scientization in the 2000s.

Scientization as a locus of controversy

In the literature on the scientization of central banks, Marcussen and other scholars argue that this process insulates organizations from external criticisms: Who would dare challenge a scientized organization? Indeed, legitimizing scientization is a well-worn credibility-enhancing strategy. However, the recent history of the BoE demonstrates that the appeal to science for legitimacy can also generate controversies both inside and outside the Bank.

First, when the Bank became independent in 1997, the Monetary Policy Committee became the central body for monetary policymaking. The composition of the MPC includes nine members, four of whom are not BoE employees. The advanced qualifications in economics of some external MPC members (as well as, for some of them, their professional experience in academia), often led them to challenge publicly how policymaking scientization proceeded at the Bank.

Facing the refusal of Mervyn King to disclose details about BoE modeling and forecasting, external MPC members voiced their concerns in the *Financial Times* (Interview, Executive 3). The BoE did not shy away from the controversy by dismissing outside criticism. On the contrary, it fostered internal debates, by equipping its external MPC members with personal staff (James, 2020: 438). These resources allowed them 'to write their speeches and scrutinize internal forecasts' (staff economist 11). While, in the past, there was a strong degree of *bricolage* involved in working with the BoE forecasting models, the MPC scrutiny forced BoE economists to address academic criticisms and provide more explanations about their modeling choices, thus engaging in contributory scientization (Goutsmedt et al., 2024).

The presence of academics within the MPC also fostered outsiders' criticisms. After its first year of existence, the MPC was notably criticized in the *Financial Times* for its 'paralysis by analysis', resulting from each member having a different opinion (James, 2020: 435). The business community also worried that 'the MPC could have been damagingly dominated by

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

central bankers and academic economists' and highlighted the importance of other profiles more connected to financial markets and the private sector, such as DeAnne Julius (James, 2020: 437).[23] For one of the Bank's most influential audiences, the push for more policymaking and contributory scientizations was not credibility enhancing.

Second, the 2007-2009 Great Financial Crisis and the main BoE policy to answer it (Quantitative Easing; QE) intensified insider controversy and public scrutiny over the role of science at the Bank. In fact, interviewees recalled that the strong institutional separation between the production of expertise on financial markets and monetary policy precluded the Bank from acting on early signs of financial instability (Interview, staff economist 11 and executive 3). An internal reorganization followed whereby both forms of expertise would be combined to feed the policymaking process.

The implementation of QE also fueled controversies about the use of specific macroeconomic models within the Bank. For example, standard new Keynesian DSGE models were deemed ineffective for formulating policies addressing financial dynamics. The implementation of QE necessitated a return to the utilization of 'simpler and older economic literature, back at least to Tobin and Brainard in the 1960s and 1970s' (Interview, staff economist 11; see also Acosta et al., 2024). A 'QE team' of in-house researchers was set up to propose policy options, but the papers they wrote never made it to the MPC's deliberation. Instead, the QE plan was decided in about three days by a small group of top executives (Interview, Executive 3). In this episode, up-to-date science was judged to be either irrelevant (DSGE models) or too immature (the research of the QE team) to be an input to policymaking around QE. In these times of crisis and emergency, policymaking imperatives trumped all three dimensions of scientization.

More recently, the issue of QE came back to haunt the BoE. In early 2021, the Economic Affairs Committee of the UK parliament – which notably included Mervyn King, who was governor of the BoE when QE was first implemented – held hearings with experts to gather evidence about the theoretical mechanisms underlying QE (Economic Affairs Committee, 2021). The experts interviewed come from the different audiences to which the BoE answers: academic researchers (e.g., Daniela Gabor, Charles Goodhart, Kenneth Rogoff), former and current central bankers (e.g., Otmar Issing, Peter Praet), consultants from financial market participants (e.g., Blackrock, City UK), financial journalists and NGOs, as well as former MPC and Treasury members (e.g., Edward Balls, Paul Tucker, Adam Posen). The interviews and the final report of the committee zoomed in on the theoretical justifications for implementing QE and academic debates on its effectiveness.

The Parliament critically examined the economic knowledge produced by the BoE. It explicitly challenged potential bias in BoE research, emphasizing that 'central banks take a more positive view of quantitative easing than independent analysts' (Economic Affairs Committee, 2021: 19). The resulting report, likewise, noted considerable 'knowledge gaps' concerning QE (Economic Affairs Committee, 2021: 19). It pointed out that the Bank's 'understanding of quantitative easing's effects and its transmission mechanisms are far from complete more than a decade on from the policy's introduction' (Economic Affairs Committee, 2021: 20). It recommended prioritizing research on the effectiveness of its transmission mechanisms and its macroeconomic effects. Moreover, the report stated that 'the Bank has not adequately engaged with debate about the tradeoffs created by sustained quantitative easing'. To ensure the existence of a counter expertise, it invited the Treasury 'to reply to any research that the Bank produces on the distributional effects of quantitative easing' (Economic Affairs Committee, 2021: 24).

In sum, the process of scientization at the BoE has not neutralized debates on the production of economic knowledge and on monetary policymaking, both inside and outside the Bank. Thus, contributory scientization (as well as policymaking scientization) does not result naturally into a process of legitimizing scientization: scientific credentials and conclusions are actually fertile grounds for controversy.

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

Conclusion

Our article can be summarized in five points that derive from our comparison between our ideal type and the BoE. First, the professional trajectories of BoE members suggest that the specialized community of central bankers has been significantly different from an ideal-typical transnational scientific community. Second, the production of research at the BoE faces a trade-off between two dimensions of scientization: technical analysis directly informing policymaking (policymaking scientization) and work meant primarily as scientific contributions (contributory scientization). Third, in its communication, the BoE caters to different audiences, and the appeal of playing the 'we are scientists' line depends on the audience. Fourth, contributory scientization at the Bank was not a linear process, and can go in reverse for a time. Fifth and finally, the BoE case shows that a tight connection to science can sometimes ignite challenges, instead of being a foolproof strategy against controversy (i.e., legitimizing scientization).

This article makes two contributions to the literature on scientization in central banks. Our first contribution is empirical. It consists in a comparison of the ideal type of a scientized central bank with the evolution of the Bank of England activities. To implement this comparison, we relied on convergent mixed methods, which allowed us to produce new insights on the articulation and tensions between the three dimensions of scientization. For instance, we have highlighted that, in the early 1990s, the increased hiring standards (thus bringing more economists with the ability to contribute to science) were mirrored in a decrease of the actual contributions to science (as measured by peer-reviewed publications): thanks to qualitative evidence, this dynamics can be interpreted as a tension between a process of contributory scientization and one of policymaking scientization. Overall, these insights indicate that scientization is not descending on central banks as an ineluctable, homogeneous, and linear force (a steamroller). The relation to science in central banks is rather shaped by strategies, seized knowingly by various central bank actors. These strategies are always developed under various imperatives, such as maintaining the credibility of the organization (the legitimizing dimension) and delivering on its mandate in tumultuous circumstances (the policymaking dimension).

Second, our conceptual contribution is to trim back the concept of scientization in three dimensions and to construct an ideal type of contributory scientization. This paves the way for further research beyond the single case of the BoE. Indeed, with a single study, we cannot generalize our BoE findings to other scientization processes in central banks. Yet, our ideal type has the potential to be mobilized in future research on other central banks and other organizations more generally, which would pave the way for a more comprehensive understanding of the diverse roles of science in policymaking institutions.

Acknowledgements. The support of the Economic and Social Research Council (ESRC) via the Rebuilding Macroeconomics Network (Grant Ref: ES/R00787X/1) is gratefully acknowledged. The authors would like to thank Juan Acosta and Béatrice Cherrier for their contributions to the Rebuilding Macroeconomics project, from which this article emerged. They would also like to thank all the participants of the symposium on central bank scientization at the conference of the European Society for the History of Science in Brussels in September 2022. Finally, the authors thank Ana Costa, Aykiz Dogan, Maxence Dutilleul, and Gonçalo Marçal for their constructive feedback, as well as two anonymous reviewers for their valuable suggestions.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/fas.2025.8

Notes

1. https://www.bankofengland.co.uk/news/2015/february/one-bank-research-agenda-launched-today. Accessed 20 December 2024.

2. We used this strategy to ensure that only employees involved in research, and thus likely to participate in contributory scientization, were included, while excluding BoE employees in administrative or clerical roles. More direct approaches were not feasible due to the absence of stable job titles within the BoE and the lack of specific administrative units tasked with research duties (there is no 'Research Department' or its equivalent).
3. For further details on these databases, see the Online Appendix (OA hereafter).
4. One advantage of using the word embedding method over a 'dictionary method' is that it measures not only the occurrences of words from our lexical indices in a paragraph, but also the proximity of all other words to our lexical fields. To put it differently, a paragraph may be similar to a lexical index even if it does not contain any words from that index, simply because it includes other words that are close in meaning to the index words. Conversely, the presence of words that are distant from our lexical indices will make the paragraphs more distant from our lexical indices (Grimmer, Roberts, and Stewart et al., 2022: 79-81). See OA for further detail on the method and Table 2 in it for examples of the speeches' paragraphs that are the closest to the lexical fields.
5. Interviews were conducted in London and online, between October 2019 and January 2021.
6. Here, it is important to remember that our sample includes individuals who publish research documents. Therefore, they are more likely to have held academic positions before joining the Bank compared to those with less research-oriented profiles. This observation reinforces our argument about the hybridity of staff profiles.
7. Excluding hires of new graduates with no *ex ante* employment, which is also trending downward.
8. Yet, most of those with an academic profile hold a position in a British university when joining the Bank.
9. See OA, Section 1.1.1.1, for details on the classification of speeches.
10. See OA, Section 1.1.1.2, for details on the identification of references.
11. Of course, a more contextualized analysis of these speeches should investigate more carefully their production process, notably the ghostwriting practices for Governors' speeches – that is, when most Governors' speeches are actually written by advisors or private secretaries to the Governor. However, sources uncovering these practices are mostly out of reach.
12. Economics had become the most common degree of staff employed by the BoE's Economics Division around the mid-1970s, followed by mathematics (Bank of England, 1976: 442). Before the 1970s, it was not uncommon for the Economics Division staff to hold degrees in English literature or History (Acosta et al., 2024: footnote 25).
13. The PhD Research Programme, started in 2015, offers a favorable entry-level career path for recent PhD graduates. The PhD Internship Programme is aimed at hosting and supporting PhD students/candidates; the current form of this program (dating from 2015) is the latest example of a longer tradition of programs for PhD candidates, dating back at least to 2007 (Bank of England, 2008: 24).
14. On the role of King in the transformation of the BoE, see Acosta et al. (2024: Section 3).
15. There are as well a few examples of individuals circulating between the two fields – academia and private business, particularly finance. Only two external MPC members have built a career in public administration (HM Treasury) or in international organizations. When leaving the MPC, external and internal members are most likely to join private business, particularly in finance.
16. Expectations on staff were set very high from the beginning of the MPC, especially because external MPC members with an academic background would challenge the forecasts. About these early years, a former Executive Director recalls: 'I think that [the staff] underinvested in the forecasting model, [which] had its problem, essentially exposed by the external MPC members. Particularly, in my recollection, Willem [Buiter], aided by Charles [Goodhart] [. . .] There were some occasions when the forecast meeting was a bit of a disaster. [. . .] These were forecast meetings where you have not made any progress because the staff hadn't adequately prepared' (Interview, Executive 3).
17. These two objectives echo the two general functions of science in politics, respectively the legitimating function and the instrumental function (Weingart, 1999: 155), which lie behind our legitimizing and policymaking scientization.
18. Recently, the BoE itself relies on RePEc rankings to assess the success of its research strategy (Bank of England Independent Evaluation Office, 2019: 8).
19. Publication in the *Staff Working Papers* has been, since the beginning, conditional to passing a peer-review process, with at least one referee external to the Bank, thus mimicking standards for academic journals.
20. Many of these contributions were published in peer-reviewed journals in collaborations with economists from UK universities or other UK institutions (Online Appendix, Figure 5).
21. Bean (Interview) also adds: 'the Bank did a lot of research, but a different kind of research. We did not produce academic research for the sake of it. If you use public money, you cannot use it for your personal career (like in academia). We value research but there were topics we thought were not appropriate'.

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

22. Some significant variations existed across the different Divisions of the Bank, with some having a stronger 'tradition' of conducting and publishing scientific research.
23. When arriving at the MPC, Julius had held positions at British Airways or the Royal Dutch Shell Group. Worries were also raised about more academic profiles like Willem Buiter, targeted as 'a Dutchman with extensive experience in academia but little exposure to the world of commerce and industry' (James, 2020: 437).

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.C., Claveau, F., Cherrier, B., 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.

Arora, S., Liang, Y., and Ma, T. (2017) A simple but tough-to-beat baseline for sentence embeddings. Presentation given to the 5th International Conference on Learning Representations. https://oar.princeton.edu/handle/88435/pr1rk2k. Accessed 25 March 2025.

Ash, E., Chen, D.L., and Naidu, S. (2022) Ideas have consequences: The impact of law and economics on American justice. NBER Working Paper No. 29788. https://www.nber.org/papers/w29788. Accessed 25 March 2025.

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.

Bank of England (1979) *Annual Report*. London: Bank of England.

Bank of England (2008) *Annual Report*. London: Bank of England.

Bank of England (2016) *Annual Report*. London: Bank of England.

Bank of England (1976) *The Work of the Economic Intelligence Department*. London: Bank of England.

Bank of England Independent Evaluation Office (2019) *Evaluation of the Bank of England's Research*. London: Bank of England Independent Evaluation Office.

Carney, M. (2015) One Bank research agenda: Launch conference. Opening Remarks by Mark Carney, 25 February. https://www.bankofengland.co.uk/speech/2015/one-bank-research-agenda-launch-conference. Accessed 25 March 2025.

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

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): 349–66.

Coats, A.W. (1996) *The Post-1945 Internationalization of Economics*. Durham, NC: Duke University Press.

Collins, H.M. and Evans, R. (2002) The third wave of science studies: Studies of expertise and experience. *Social Studies of Science*, 32(2): 235–96.

Coombs, N. and Thiemann, M. (2022) Recentering central banks: Theorizing state-economy boundaries as central bank effects. *Economy and Society*, 51(4): 535–58.

Creswell, J.W. and Clark, V.L.P. (2017) *Designing and Conducting Mixed Methods Research*. Thousand Oaks, CA: Sage Publications.

Davis, E.P. (1982) The consumption function in macroeconometric models: A comparative study. Bank of England Discussion Paper (Technical Series) No. 1. https://www.bankofengland.co.uk/-/media/boe/files/archive/discussion-paper/the-consumption-function-in-macroeconomic-models-a-comparative-study.pdf. Accessed 25 March 2025.

Dietsch, P., Claveau, F., and Fontan, C. (2018) *Do Central Banks Serve The People?* Cambridge: Polity.

Economic Affairs Committee (2021) *Quantitative Easing: A Dangerous Addiction? Hearings of the Economic Affairs Committee*. London: House of Lords.

Elgie, R. and Thompson, H. (1998) *The Politics of Central Banks*. London: Routledge.

Fourcade, M. (2006) The construction of a global profession: The transnationalization of economics. *American Journal of Sociology*, 112(1): 145–94.

Georgakakis, D. and Lebaron, F. (2018) Yanis (Varoufakis), the Minotaur, and the field of Eurocracy. *Historical Social Research*, 43(3): 216–47.

Gerhardt, U. (1994) The use of Weberian ideal-type methodology in qualitative data interpretation: An outline for ideal-type analysis. *Bulletin of Sociological Methodology*, 45(1): 74–126.

Golub, S., Kaya, A., and Reay, M. (2015) What were they thinking? The Federal Reserve in the run-up to the 2008 financial crisis. *Review of International Political Economy*, 22(4): 657–92.

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

Goutsmedt, A. and Sergi, F. (2025) Redefining scientization: Central banks between science and politics. *Finance and Society*, 11.

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

Gregory, R. (2007) New public management and the ghost of Max Weber: Exorcized or still haunting? In: Laegreid, P. and Christensen, T. (eds.) *Transcending New Public Management*. London: Routledge, 233–56.

Grimmer, J., Roberts, M.E., and Stewart, B.M. (2022) *Text As Data: A New Framework for Machine Learning and the Social Sciences*. Princeton, NJ: Princeton University Press.

Haldane, A. and McMahon, M. (2018) Central bank communications and the general public. *AEA Papers and Proceedings*, 108: 578–83.

Harrington, B. and Seabrooke, L. (2020) Transnational professionals. *Annual Review of Sociology*, 46(1): 399–417.

Heilbron, J. and Gingras, Y. (2018) The globalization of European research in the social sciences and humanities (1980–2014): A bibliometric study. In: Heilbron, J., Sorá, G., and Boncourt, T. (eds.) *The Social and Human Sciences in Global Power Relations*. Berlin: Springer International, 29–58.

James, H. (2020) *Making a Modern Central Bank: The Bank of England, 1979–2003*. Cambridge: Cambridge University Press.

King, M. (1993) The analytical functions. Memo to the Deputy Governor, 5 January. Bank of England Archives, 9A226/1.

Lebaron, F. and Dogan, A. (2016) Do central bankers' biographies matter? Sociologica, 2: 1–37.

Maman, D. and Rosenhek, Z. (2012) Mobilizing globalization in local political fields: The strengthening of the central bank in Israel. *Review of International Political Economy*, 19(2): 317–40.

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, 321–33.

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: Europeanization, Convergence, and Power*. Oxford: Oxford University Press, 373–90.

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 Monographs*, 64(2): 146–69.

Mudge, S.L. and Vauchez, A. (2018) The ECB and the necessity of calculating Europe. *Historical Social Research*, 43(3): 248–73.

Rodriguez, P.L. and Spirling, A. (2022) Word embeddings: What works, what doesn't, and how to tell the difference for applied research. *The Journal of Politics*, 84(1): 101–15.

Rosenhek, Z. (2013) Diagnosing and explaining the global financial crisis: Central banks, epistemic authority, and sense making. *International Journal of Politics, Culture, and Society*, 26(3): 255–72.

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): 430–56.

Singleton, J. (2011) *Central Banking in the Twentieth Century*. Cambridge: Cambridge University Press.

Swedberg, R. (2018) How to use Max Weber's ideal type in sociological analysis. *Journal of Classical Sociology*, 18(3): 181–96.

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): 1433–58.

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): 103–45.

Threadgold, A.R. (1978) Personal savings: The impact of life assurance and pension funds. Bank of England Discussion Paper No. 1. https://www.bankofengland.co.uk/-/media/boe/files/archive/discussion-paper/personal-savings-the-impact-of-life-assurance-and-pension-funds.pdf. Accessed 25 March 2025.

Trondal, J. and Jeppesen, L. (2008) Images of agency governance in the European Union. *West European Politics*, 31(3): 417–41.

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): 865–79.

https://doi.org/10.1017/fas.2025.8 Published online by Cambridge University Press

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

Weingart, P. (1999) Scientific expertise and political accountability: Paradoxes of science in politics. *Science and Public Policy*, 26(3): 151–61.

Woodford, M. (2003) *Interest and Prices: Foundations of a Theory of Monetary Policy*. Princeton, NJ: Princeton University Press.

Zahner, J. and Baumgartner, M. (2023) Whatever it takes to understand a central banker: Embedding their words using neural networks. IMFS Working Paper No. 194. https://www.econstor.eu/handle/10419/280939. Accessed 25 March 2025.

Cite this article: 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*. https://doi.org/10.1017/fas.2025.8