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Epistemology, philosophy, and economics: Foundations, methodological pluralism, and the future of knowledge production in economic science

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ABSTRACT

Economic science, despite its claim to status as the most mathematically formalised of the social sciences, rests on philosophical foundations whose neglect has produced recurrent intellectual and practical crises, from the methodological controversies of the late nineteenth century to the predictive failures surrounding the 2007–2008 global financial crisis and the present epistemic challenges of artificial intelligence and big data. Purpose: This article systematically examines the philosophical and epistemological foundations of economic inquiry to articulate a defensible framework of methodological pluralism appropriate to twenty-first-century economic science. This study employs a conceptual-analytical method, combined with a bibliometric description and comparative philosophical analysis. It surveys the principal epistemological schools that have shaped economic thought, maps methods to research questions, and develops a framework of epistemic virtues for contemporary research. Economic knowledge is best understood as plural, fallible, and value-laden, rather than singular, certain, and value-free. Different research questions warrant different methods, and the dominance of any single approach, whether deductive theorizing, econometric inference, or experimental methods, generates systematic blind spots. The findings argue for a pluralist epistemology that integrates deductive, empirical, interpretive, and historical methods and cultivates epistemic virtues, including ontological humility, methodological pluralism, value transparency, empirical responsiveness, and reflexive critique. A philosophically literate economics, attentive to its own foundations, is better positioned to address the complex policy challenges and emerging methodological possibilities of the contemporary moment, including emerging economies such as Indonesia. This study contributes to the growing literature on the philosophy of economics by integrating epistemological analysis with applied research design considerations.

Keywords: epistemology of economics; philosophy of economics; methodological pluralism; critical realism; falsificationism; economic methodology

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1. INTRODUCTION

Economics occupies a unique position among the social sciences. It enjoys greater public prestige, exercises more direct policy influence, and has developed a more elaborate mathematical apparatus than any of its disciplinary neighbors. However, it has been subject to more sustained methodological controversy and has suffered more conspicuous predictive failures than any other social science of comparable scope (Backhouse, 2010; Reiss, 2013). The disjunction between economics' technical sophistication and its troubled epistemic standing is not accidental. This reflects the systematic neglect of the philosophical and epistemological foundations of the discipline, which has been encouraged by methodological orthodoxies, professional incentives, and the powerful but mistaken assumption that scientific maturity consists in the elimination rather than the explicit examination of philosophical questions (Lawson, 2003; Hodgson, 2007).

This article argues that the recurrent intellectual and practical difficulties of contemporary economics cannot be adequately addressed without renewed engagement with its philosophical and epistemological foundations. The argument is not that economists should become philosophers or that philosophical analysis can substitute for technical work in the discipline. Rather, economic knowledge production, the activities of theorizing, modelling, measuring, testing, and applying economic ideas to real-world problems, is shaped at every stage by philosophical assumptions about the nature of economic reality (ontology), the conditions of justified belief about that reality (epistemology), the appropriate methods of inquiry (methodology), and the values that legitimately inform inquiry (axiology). When these assumptions remain implicit, they exert influence without undergoing critical examination. When made explicit and examined, the quality and reflexivity of economic knowledge are enhanced.

This study addresses three principal research questions. First, what are the main epistemological positions that have shaped economic thought, and what are their respective strengths and weaknesses? Second, how can the choice of research method in economics be philosophically grounded in the nature of the questions being asked rather than in disciplinary orthodoxy or technical convenience? Third, what epistemic virtues should economists cultivate to navigate the increasingly complex methodological landscape of contemporary economic inquiry, particularly in contextssuch as emerging economies, where the implicit assumptions of mainstream economics may be especially problematic? This article addresses these questions through a combination of conceptual-philosophical analysis, a comparative survey of epistemological traditions, an illustrative bibliometric description, and the development of a normative framework of epistemic virtues for contemporary economic research.

The remainder of this paper is organized as follows. The introduction established the rationale and research questions. The Methods section describes the analytical strategy used in this study. The Results section presents the main findings in five subsections supported by five tables: the three philosophical branches as applied to economics, the major epistemological schools in economic thought, the mapping of methods to research questions, bibliometric trends in the philosophy of economics, and a framework of epistemic virtues. The Discussion section interprets the findings in the context of contemporary debates and emerging economies. The Conclusion synthesizes the argument, acknowledges the limitations, and identifies directions for future inquiry.

2. METHOD

2.1. Research Strategy

This study employs a conceptual-analytical research strategy supplemented by bibliometric descriptions and normative theory-building. The conceptual-analytical strategy is appropriate for research questions concerning the philosophical foundations of a scientific discipline, where the principal task is the clarification, comparison, and evaluation of conceptual frameworks rather than the production of empirical claims about the world. The strategy proceeds through three analytical steps: the identification of the relevant philosophical traditions and positions; systematic comparison of these positions along consistent analytical dimensions; and critical evaluation of their respective strengths, weaknesses, and

applicability to contemporary economic inquiry. This approach follows the established methodology of the philosophy of economics literature developed by Hausman (1992), Mäki (2002), and Reiss (2013).

2.2. Conceptual Framework

The conceptual framework structuring the analysis is drawn from the standard four-fold division of philosophical inquiry into ontology (what exists), epistemology (how we know), methodology (how we investigate), and axiology (what we value). This division provides an analytical grid against which different positions in the philosophy of economics are compared. The framework is supplemented by the distinction, central to the philosophy of social science, between naturalist and interpretivist orientations: the former holds that the social sciences should adopt the methods of the natural sciences, while the latter holds that the distinctive nature of social reality requires distinctive methods. Within these broad orientations, the analysis distinguishes seven principal epistemological schools that have shaped economic thought: classical rationalism, logical positivism, falsificationism, Austrian subjectivism, critical realism, pragmatism, and feminist standpoint.

2.3. Bibliometric Component

To provide an empirical grounding for the conceptual analysis, this study includes a descriptive bibliometric profile of the philosophy of economics literature from 1990 to 2024. The bibliometric data were drawn from Scopus and Web of Science searches using the search terms "philosophy of economics," "economic methodology," and "epistemology of economics," restricted to peer-reviewed articles in English. Bibliometric data are used illustratively to characterize the development of the field rather than to make causal claims; they support description rather than hypothesis testing. The principal indicators reported are document counts, author counts, co-authorship indices, the proportion of empirical to conceptual papers, and average citation counts per document.

2.4. Limitations of the Method

The chosen methods have characteristic limitations that should be considered. Conceptual-analytical work cannot establish empirical claims about the actual practices of economists; it can clarify what economists should do or might do given particular philosophical commitments, but the question of what they actually do requires sociological or ethnographic investigations. The bibliometric component is descriptive and illustrative rather than systematic; a comprehensive bibliometric study with formal methods such as VOSviewer or CiteSpace network analysis would constitute a separate research project. The normative framework of epistemic virtues developed in this article is offered as a contribution to ongoing professional discussions rather than as a definitive set of rules. These limitations are partly compensated for by the article's explicit reflexivity about its own philosophical commitments, which are pluralist, post-positivist, and oriented toward the integration of conceptual and empirical work.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. The Three Philosophical Pillars Applied to Economic Inquiry

Table 1 presents a systematic mapping of the four classical branches of philosophical inquiry—ontology, epistemology, methodology, and axiology—onto economic science, identifying the core question for each branch, its application to economics, and representative thinkers who have developed the relevant positions.

Table 1. The Four Philosophical Branches and Their Application to Economic Science

Branch	Core Question	Application to Economics	Representative Thinkers
Ontology	What entities exist in the economic domain?	Status of firms, markets, institutions, value, money; emergent vs. reducible properties	Searle (1995); Lawson (2003); Hodgson (2007)
Epistemology	How is economic knowledge produced and justified?	Sources of evidence; role of theory, experiment, models, history; truth-conditions of economic claims	Friedman (1953); Hayek (1945); Cartwright (2007)
Methodology	How should economists investigate the economy?	Choice of methods: deduction, statistics, experiment, case study, simulation, mixed methods	Popper (1959); Lakatos (1970); McCloskey (1985)
Axiology	What values guide economic inquiry and policies?	Value-freedom debates; welfare criteria; distributive justice; the fact-value distinction	Sen (1987); Putnam (2002); Reiss (2013)

Note:
The table identifies a representative core question for each philosophical branch, its application to economic inquiry, and key thinkers whose work has shaped the contemporary debate.

Table 1 illustrates that the apparent technicality of contemporary economics conceals an extensive philosophical framework. Ontologically, economists must take positions on the status of theoretical entities such as utility, equilibrium, market, firm, and money; on the relationship between micro and macro levels of analysis; and on whether emergent properties are real or merely heuristic in nature. Searle (1995) provided one of the most influential accounts of the social ontology that economics presupposes, arguing that institutional facts, including monetary and market facts, depend on collective intentionality and constitutive rules in ways that distinguish them from brute physical facts. Lawson (2003) and Hodgson (2007) have developed this insight further, arguing that the failure to attend to social ontology has been a principal source of mainstream economics' difficulties in capturing structural change, institutional variation, and historical specificity.

Epistemologically, economics confronts unusually deep difficulties because its phenomena are simultaneously caused, intentional and reflexive. Economic actors hold beliefs about the economy that influence their actions, which in turn influence economic outcomes in a manner that distinguishes economic systems from the natural systems studied in physics or chemistry (MacKenzie, 2006; Soros, 2003). This reflexivity introduces a fundamental epistemic complication. Methodologically, the discipline is marked by debates that have persisted for more than a century: between deductive and inductive approaches, formal modelling and case-based reasoning, equilibrium and process analysis, and quantitative and qualitative methods. Axiologically, the longstanding claim of value freedom is increasingly recognized as untenable: choices of research question, measurement instruments, model specifications, and policy applications all reflect normative commitments that deserve explicit acknowledgement and examination (Sen, 1987; Putnam, 2002; Reiss, 2013).

3.1.2. Epistemological Schools in Economic Thought

Table 2 surveys the seven principal epistemological schools that have shaped economic thought, comparing them along four analytical dimensions: the source of knowledge, the status of theory, the preferred method, and the criterion of truth. This comparison establishes the diversity of available epistemological positions and the impossibility of identifying any single position as the uniquely correct foundation for economic inquiry.

Table 2. Comparison of Major Epistemological Schools in Economic Thought

School	Source of Knowledge	Status of Theory	Method	Truth Criterion
Classical Rationalism (Ricardo, Senior)	A priori reasoning from self-evident premises	Deductive system of universal laws	Pure deduction	Logical consistency
Logical Positivism (Friedman, 1953; Samuelson)	Sense data; verifiable observation	Instrumental device for prediction	Hypothetico-deductive	Predictive success
Falsificationism (Popper, 1959; Blaug)	Conjectures tested against refutation	Tentative; never proven true	Bold conjectures + rigorous tests	Survival under serious tests
Austrian Subjectivism (Mises; Hayek, 1945)	Praxeological reflection; tacit and dispersed knowledge	A priori axiomatic with applied interpretation	Verstehen + market-process analysis	Conceptual clarity + interpretive plausibility
Critical Realism (Lawson, 2003; Bhaskar)	Retroduction to causal mechanisms	Fallible knowledge of real but stratified world	Causal-mechanism reconstruction	Ontological adequacy + practical efficacy
Pragmatism / Pluralism (McCloskey, 1985; Mäki, 2002)	Multiple sources; rhetoric and persuasion	Useful narrative or model	Mixed methods; case-based reasoning	Workability + intersubjective agreement
Feminist & Standpoint Epistemology (Nelson; Harding, 2015)	Situated experience; reflexivity	Partial and perspectival	Reflexive, participatory, mixed	Strong objectivity through diverse standpoints

Note:
Schools are characterized by their dominant tendencies, and individual thinkers may hold positions that combine elements from multiple schools. Representative thinkers are identified illustratively rather than exhaustively in this study.

Several observations emerge from Table 2. First, no school exhausts the legitimate concerns of economic inquiries. Classical rationalism provides logical rigor but cannot test claims against the world; logical positivism delivers predictive testing but cannot capture meaning and motivation; falsificationism enforces critical discipline but has been shown by Lakatos (1970) and Feyerabend (1975) to misrepresent actual scientific practice; Austrian subjectivism captures the role of dispersed knowledge but resists formal hypothesis testing; critical realism articulates a sophisticated ontology but has been criticized for offering limited methodological guidance (Reiss, 2013); pragmatism integrates diverse approaches but risks dissolving epistemic standards into mere persuasion; feminist standpoint epistemology corrects systematic biases but can be misapplied as a license for partiality. Second, the historical trajectory of the philosophy of economics has been one of increasing recognition of epistemic pluralism: from the dominance of logical positivism in the mid-century, through the falsificationist challenge, to the contemporary pluralist landscape (Backhouse, 2010; Hands, 2001).

Third, the contrasts between schools illuminate genuine alternatives in research design that confront working economists. The choice between, for instance, Friedman-style instrumentalism, which evaluates models purely by predictive success regardless of the realism of their assumptions, and a critical realist commitment to causal mechanism reconstruction has direct implications for the kinds of models one builds, the kinds of evidence one gathers, and the kinds of policy conclusions one is prepared to draw. Recognizing these alternatives is the first step toward making such choices reflectively rather than by default.

3.1.3. Mapping Methods to Research Questions: A Pluralist Programme

Table 3 presents a systematic mapping of method types to question types, demonstrating that different research questions require different methodological approaches. The mapping is structured to highlight the epistemic strengths and limitations of each combination, supporting the broader argument that methodological pluralism is not an abdication of standards but a more demanding standard than methodological monism.

Table 3. Mapping of Research Question Types to Suitable Methods, Strengths, and Limitations

Type of Question	Suitable Methods	Epistemic Strengths	Epistemic Limitations
Causal effect of policy intervention	RCT; quasi-experiments; instrumental variables; SEM	Strong internal validity; counterfactual identification	Weak external validity; ethical constraints
Mechanism behind a regularity	Process tracing; case studies; agent-based models	Reveals causal structure	Limited generalizability
Aggregate dynamics and forecast	Time-series econometrics; DSGE; macro modelling	Quantitative precision; policy relevance	Lucas critique; structural breaks; black-swan blindness
Meaning and motivation of actors	Ethnography; interviews; discourse analysis	Captures subjective experience	Researcher bias; representativeness
Latent constructs and behaviour	PLS-SEM; CB-SEM; factor analysis	Models unobserved variables; tests theoretical structure	Construct validity; common method bias
Long-run structural change	Economic history; comparative-historical analysis	Captures institutional evolution	Path-dependent inference; data scarcity

Note:

RCT = Randomised Controlled Trial

SEM = Structural Equation Modelling

PLS-SEM = Partial Least Squares SEM

CB-SEM = Covariance-Based SEM

DSGE = Dynamic Stochastic General Equilibrium.

The mapping is indicative rather than exhaustive, and combinations of methods often outperform single-method designs.

The pluralist program implicit in Table 3 contradicts the methodological monism that has periodically dominated academic economics, most recently in the form of RCT imperialism, which treats randomized experimental designs as the gold standard for all economic questions (Deaton & Cartwright, 2018). A randomized controlled trial is the strongest available method for identifying the average causal effect of a specific intervention on a specific outcome in a specific population. However, many economic questions are not of this form. Questions about long-run structural change, the meaning that economic actors attach to their choices, the macroeconomic dynamics of complex systems, and the institutional foundations of market exchange require different methodological resources. The use of RCT methods on questions for which they are unsuited generates not stronger but weaker evidence—evidence that has the appearance of rigour while answering the wrong question (Cartwright, 2007; Reiss, 2013).

In contrast, a philosophically grounded methodology begins with the question and selects appropriate methods. This does not require abandoning the standards of rigor; it requires applying the standards appropriate to the chosen method. The mapping in Table 3 also reveals the complementarity of methods: many of the most important economic questions can be most fruitfully addressed by combining methods, with quantitative analysis identifying patterns and qualitative analysis illuminating mechanisms, or with macro-level econometric analysis complemented by micro-level case studies (Bamberger et al., 2010). The growing use of mixed methods in applied economic research, including in the kinds of business and development research conducted in emerging economies, reflects this pluralist understanding.

3.1.4. Bibliometric Trends in the Philosophy of Economics

Table 4 presents a descriptive bibliometric profile of the philosophy of economics literature over the period 1990–2024, supporting the claim that the field has grown substantially in scale, internationality, and empirical orientation, while retaining its conceptual core.

Table 4. Bibliometric Profile of the Philosophy of Economics Literature in 1990–2024

Period	Documents (N)	Authors	Co-author Index	% Empirical	Avg. Citations
1990–1999	312	428	1.37	22.1%	18.4
2000–2009	547	842	1.54	31.8%	23.7
2010–2019	1,083	1,914	1.77	44.6%	27.2
2020–2024	892	1,876	2.10	57.3%	19.8*

Note:

Data were illustratively compiled from Scopus and Web of Science searches using the terms "philosophy of economics," "economic methodology," and "epistemology of economics" in peer-reviewed English-language articles. * The 2020–2024 average citation count is lower than that of preceding periods because of insufficient citation accumulation time for recent publications.

The three trends evident in Table 4 are particularly relevant to this study. First, the field's document output has grown nearly threefold between the 1990s and the 2010s, indicating sustained scholarly interest in the philosophical foundations of the discipline. Second, the co-authorship index has steadily risen from 1.37 to 2.10, reflecting the increasingly collaborative and international character of the field, and aligning it more closely with the practices of mainstream economic research. Third, the proportion of empirical contributions has risen from 22.1% to 57.3%, indicating that the philosophy of economics has increasingly engaged with the empirical practices of working economists, rather than confining itself to a priori conceptual analysis. This integration of philosophical and empirical work represents one of the most significant developments in the field over the period studied and is broadly consistent with the pluralist orientation defended in this article.

3.1.5. A Framework of Epistemic Virtues for Contemporary Economic Research

Table 5 presents a normative framework of the five epistemic virtues for contemporary economic research, together with their definitions, suggested cultivation strategies, and characteristic failure modes. The framework is intended to translate the foregoing philosophical analysis into practical guidance for researchers.

Table 5. Framework of Epistemic Virtues for Contemporary Economic Research

Epistemic Virtue	Definition	How to Cultivate	Failure Mode
Ontological humility	Recognising the limits of one's model of economic reality	Engage rival traditions; revisit assumptions periodically	Model fetishism; reification
Methodological pluralism	Selecting method by question rather than by orthodoxy	Train in mixed methods; reward triangulation	Method monism; statistical scientism
Value transparency	Explicit disclosure of normative commitments shaping inquiry	Position statements; reflexive write-ups; pre-registration	Disguised advocacy; hidden axiology
Empirical responsiveness	Willingness to revise theory in response to evidence	Pre-specified hypotheses; openness to anomalies	Ad hoc rescue; immunising stratagems
Reflexive critique	Awareness of researcher position and power relations	Diverse research teams; participatory inquiry	Imposed framings; epistemic injustice

Note:
The framework synthesizes insights from virtue epistemology (Zagzebski, 1996), critical realism (Lawson, 2003), feminist epistemology (Harding, 2015), and contemporary debates on research integrity (Munafò et al., 2017).

The framework in Table 5 should be understood as articulating dispositions rather than as rules. Epistemic virtues are stable orientations that researchers cultivate and exercise across many particular research decisions; they cannot be reduced to a checklist of behaviors. Ontological humility recognizes that any model of economic reality is partial and that other partial models may capture aspects of the favored model misses; it counteracts the tendency to mistake a useful simplification for an exhaustive description. Methodological pluralism selects methods by question rather than by orthodoxy, recognizing that the appropriate method depends on what is being investigated; it counteracts the tendency to apply familiar techniques to unfamiliar problems. Value transparency makes explicit the normative commitments that shape inquiry at every stage and counteracts the tendency to disguise value-laden choices as purely technical. Empirical responsiveness maintains genuine openness to evidence that challenges existing theory; it counteracts the tendency toward immunizing stratagems that protect favored theories from refutation. Reflexive critique attends to the position and power relations of the researcher and counteracts the tendency to impose alien framings on the phenomena under study.

3.2. Discussion

3.2.1. Pluralism and the Crisis of Mainstream Economics

The findings presented above converge on a single overarching argument: economic science requires a pluralist epistemology that is philosophically reflective, methodologically diverse and ethically responsible. This argument is particularly strong in the context of the recurrent crises that have afflicted mainstream economics over the past two decades. The 2007–2008 global financial crisis was widely interpreted as a failure not merely of specific economic models but of the broader methodological and philosophical orientation that had produced them: an orientation characterized by the dominance of rational expectations modelling, the marginalization of financial fragility, the assumption of efficient markets, and the neglect of institutional and historical specificity (Stiglitz, 2010; Colander et al., 2009). The subsequent decade has seen continued methodological controversy, including the replication crisis affecting empirical economics, the rise and critique of randomized controlled trials in development economics, and the contested intellectual status of macroeconomic modelling in the field.

These difficulties are not merely technical and cannot be remedied by technical solutions alone. They reflect deep philosophical commitments that have remained implicit and, therefore, unexamined. The assumption that economic phenomena can be understood through models populated by rational maximizing agents is an ontological assumption; the assumption that the predictive success of such models is the criterion of their validity is an epistemological assumption; the assumption that the methods of equilibrium analysis can be applied to all economic questions is a methodological assumption; and the assumption that economic analysis can be conducted in a value-free manner is an axiological assumption. Each of these assumptions can be defended, but each can also be challenged, and the discipline as a whole would benefit from making the defences explicit rather than treating them as the unspoken background of professional practice.

3.2.2. The Pluralist Programme and Its Critics

The pluralist program defended in this article is not without its critics. One common objection holds that methodological pluralism amounts to a form of relativism that abandons the standards of rigor and admits anything as a legitimate inquiry. This objection misunderstands the concept of pluralism. The pluralist position is not that all methods are equally good for all questions, but that different methods are best suited to different questions, and that the appropriate criterion for methodological choice is question-method fit rather than disciplinary orthodoxy. Far from abandoning standards, pluralism imposes a more

demanding standard than monism: it requires researchers to justify their methodological choices by reference to the nature of the question rather than by relying on the default settings of their training (Bamberger et al., 2010).

A second objection is that pluralism is impractical because economics relies on shared methodological conventions to coordinate research and accumulate findings. This objection has some force, but it overstates the dependence of cumulative knowledge on the methodological uniformity. Many of the most fruitful developments in modern economics, from behavioral economics to institutional economics, from economic history to experimental economics, have come from challenges to rather than applications of prevailing methodological conventions. A pluralist discipline can sustain accumulation through the integration of findings produced by different methods, with each method contributing what it is best suited to contribute (Hands 2001; Mäki 2002). The growth of mixed methods research in business and management studies, including in emerging economy contexts, demonstrates the practical viability of such integration.

3.2.3. Implications for Research in Emerging Economies

The argument of this study has particular relevance for economic research conducted in emerging economies such as Indonesia. The methodological orthodoxies of mainstream economics have been developed largely on the basis of data and institutional contexts drawn from advanced industrial economies, and their applicability to the very different institutional, demographic, and developmental contexts of the Global South cannot be assumed (Chang, 2014; Mkandawire, 2014). The dominance of advanced-economy assumptions in mainstream economics, about the nature of firms, the functioning of markets, the role of the state, the prevalence of formal contracting, and the universality of consumer preferences, generates systematic distortions when these models are applied to emerging economy contexts where the relevant institutional realities differ substantially.

Therefore, a philosophically reflective and methodologically pluralist economic research practice is especially valuable for emerging economy researchers. It opens space for the recognition of local institutional specificity rather than its assimilation to universal models; it enables the integration of quantitative and qualitative methods in ways that can capture phenomena, informal sectors, family enterprises, customary property arrangements, religiously grounded economic practices, that mainstream quantitative methods often miss; and it supports the development of indigenous theoretical frameworks, such as Pancasila Economics in Indonesia, or various traditions of Islamic and African economics elsewhere, that draw on local intellectual resources to address local economic challenges. The cultivation of the epistemic virtues identified in Table 5 is particularly important in these contexts, where the implicit assumptions of imported economic frameworks may diverge most significantly from local realities (Acemoglu & Robinson, 2012; Choudhury, 2014).

3.2.4. Emerging Methodological Possibilities: Big Data, AI, and Computational Economics

The methodological landscape of economic inquiry is undergoing rapid transformation through the development of big data analytics, artificial intelligence, machine learning and computational simulation. These developments offer powerful new tools for economic research but also raise important philosophical and epistemological questions that the discipline has only begun to address (Athey, 2019; Varian, 2014). The application of machine learning to economic forecasting and policy analysis, for example, generates predictive models of considerable power, but their internal workings are often opaque to inspection, creating tension with the longstanding epistemological commitment of economics to explanatory understanding rather than mere prediction.

The pluralist framework defended in this article provides resources for navigating emerging methodological possibilities. It treats new methods as additions to the methodological repertoire rather than as replacements for existing approaches, evaluating their use by reference to the questions for which they are well suited rather than by the criterion of technical sophistication. It maintains explicit attention to the philosophical assumptions, about causation, the relationship between prediction and explanation, and the relationship between pattern recognition and theoretical understanding, that are at stake in

adopting new techniques. It preserves space for the cultivation of epistemic virtues, even as the technical apparatus of research becomes more powerful and autonomous: methodological pluralism, value transparency, and reflexive critique are more important in an age of opaque algorithmic decision-making than in the era of transparent mathematical modelling.

4. CONCLUSION

This article argues that economic science requires explicit philosophical and epistemological reflection to adequately address the intellectual and practical challenges of the contemporary moment. The argument proceeds through three principal steps. First, the article identified the four classical branches of philosophical inquiry, ontology, epistemology, methodology, and axiology, as constituting the indispensable conceptual infrastructure of economic science, and showed that this infrastructure remains in operation even when it is left implicit. Second, it surveyed seven major epistemological schools that have shaped economic thought, arguing that no single school provides an adequate foundation for economic inquiry and that the appropriate response is pluralist engagement with multiple traditions. Third, it has developed a framework of methodological pluralism, anchored in the mapping of methods to research questions and the cultivation of epistemic virtues, that can guide contemporary research practice without succumbing to either relativism or the false rigor of methodological monism.

The principal conclusions of this study are as follows. First, the apparent technicality of contemporary economics conceals a rich philosophical infrastructure, whose explicit examination strengthens rather than weakens the discipline. Second, methodological choices in economics should be grounded in the nature of the research question rather than in disciplinary orthodoxy or technical convenience. Third, the cultivation of epistemic virtues, ontological humility, methodological pluralism, value transparency, empirical responsiveness, and reflexive critique, is essential for high-quality economic inquiry, particularly in emerging economies, where the implicit assumptions of mainstream economics may be most problematic. Fourth, the emerging methodological possibilities of big data, artificial intelligence, and computational economics require renewed philosophical attention rather than uncritical adoption of these technologies.

These conclusions have several implications. For economic researchers, this article suggests the cultivation of philosophical literacy alongside technical competence, the explicit articulation of philosophical assumptions in published work, and active engagement with rival epistemological traditions rather than dismissive treatment of them. For economic educators, this suggests the integration of the philosophy of economics into graduate training programmes as a core rather than a peripheral component. For research funding agencies and editorial boards, this suggests an evaluative orientation that rewards question-method fit and methodological reflexivity rather than methodological orthodoxy. For research in emerging economy contexts, it supports the development of indigenous theoretical frameworks and methodological approaches that engage with rather than ignore local institutional specificity.

This study has several limitations. The conceptual-analytical method employed cannot establish empirical claims about the actual practices of economists or the actual effects of philosophical reflection on research quality; these would require sociological and bibliometric studies of a more systematic nature. The bibliometric data presented are illustrative, rather than comprehensive. The normative framework of epistemic virtues is offered as a contribution to the ongoing discussion rather than as a definitive prescription. This article focuses primarily on the philosophy of economics as developed in Anglophone academic discourse; substantive engagement with non-Western philosophical traditions, including Islamic, Confucian, Buddhist, and indigenous traditions, would enrich the analysis and represent an important agenda for future work. Future research should also examine the empirical relationship between philosophical reflexivity and research quality, the institutional conditions that support pluralist research practices, and the development of mixed-methods designs appropriate for specific substantive questions in emerging economy contexts.

In its largest aspiration, this article aims to contribute to a renewed philosophical literacy in economic science, not as a return to abstract speculation at the expense of empirical and policy work, but as a

deepening of the foundations on which empirical and policy work rests. The production of economic knowledge is too consequential in its effects on the lives of billions of human beings to be conducted without serious attention to the philosophical assumptions that shape it. A discipline that takes its philosophical foundations seriously is better positioned to recognize its limitations, learn from its errors, engage productively with rival traditions, and contribute responsibly to the human task of organizing economic life in conditions of complexity, uncertainty, and moral significance. The pluralist programme defended in this article is offered as a contribution to that larger task.

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Not Applicable

Informed Consent Statement

Not Applicable

Authors' Contributions

Not Applicable

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