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Estrella Trincado Aznar and Fernando López Castellano

Science, Technology and Innovation in the History of Economic Thought

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This volume makes a significant contribution to the history of economic thought by offering an assessment of the role of innovation, science and technology, and their relationship to technological change, economic development and economic theory across the main schools of economic thought over the last two centuries. Technological change, a pivotal concept throughout the book, has been a persistent concern of political economy and a crucial driver of theoretical developments. Its influence extends across many other themes that the book addresses, from the connections between technological change and institutions, to its impact on productivity and the organization of labour, innovation policies and contemporary debates such as technological unemployment, sustainability, ecological transition and the limits to economic growth. Most contributions adopt a contextual approach, linking the economic ideas of each period to their scientific and technological framework, enabling a better understanding of the emergence and evolution of ideas on innovation and technological change.

The book comprises fourteen chapters, divided into three parts in addition to an introduction and a general conclusion. The first part reviews the ideas on innovation from the Enlightenment to the classical period, even if not focusing on classical political economists. The second part does the same for the neoclassical period, including alternative analysis such as Weberian, Schumpeterian and Keynesian analyses. The third part adopts a more transversal perspective, addressing some specific debates on technological change an innovation. Unsurprisingly, Schumpeterian views occupy a prominent place in the book. Nevertheless, some chapters incorporate other authors and traditions of economic thought, expanding the scope of inquiry and widening our perspective on innovation and technological change.

In the introduction, the two editors establish the book's analytical framework. Innovation is presented as a transversal category that articulates the connections between technical progress, economic development and institutional change. It is considered an axis for the interpretation of the history

of economics within a multidimensional approach incorporating institutional, sociological and political factors. The historical ambivalence of technical progress is also highlighted: while it fosters growth and productivity, it may generate distributive, labour and institutional tensions. The volume adopts a supply side perspective, of innovation and economic ideas led by science and technological advances, contributing to the debate about the role of science and technology on our notions of progress.

The first two parts of the book – a chronological assessment of technological change since the Enlightenment – show that concerns about technological change have been present throughout the history of economics, albeit framed in different ways. Approaches, methods, and objectives differ considerably across the contributions in these two sections. This diversity is, on the one hand, enriching, as it allows the reader to approach the subject from multiple perspectives; on the other hand, it comes at the detriment of the volume's unity.

The first part opens with a brief reflection on the evolution of the concept of innovation that culminates in Schumpeterian models. More systematic is the editors' subsequent analysis on the relationship between invention, institutional change, and economic development in the Scottish Enlightenment, including a thorough assessment of Smith's views and an insightful reference to John Rae as a precursor of modern innovation approaches. Their analysis extends to contemporary economics of innovation and modern institutionalism, offering a convincing long-term perspective on the evolution of the concept. Another noteworthy contribution examines the pre-Schumpeterian concept of innovation through the works of List, Babbage and Von Thünen, whose reflections on industrial policy, the organization of production and division of labour anticipate later debates on innovation. The section concludes with an original chapter drawing on Marx, which explores the processes of alienation and commodification in capitalism, and their connection to transhumanism. The utilitarian principles of transhumanism offer new light on the tension between maximization and the pursuit of virtue.

The second section begins with an analysis of the Jevons paradox and contemporary sustainability debates, building a bridge between the history of economic thought and present-day concerns. It also highlights persistent tensions between innovation and environmental sustainability. A Weberian sociological perspective then broadens the book's scope beyond economics. Two subsequent chapters return to Schumpeterian approaches to innovation: one compares them with Keynesian insights, while the other argues that the neoclassical framework's structural limitations in explaining innovation have contributed to the resurgence of Schumpeterian and evolutionist paradigms. Where the neoclassical model treats innovation as an exogenous shock, the evolutionist paradigm views it as a cumulative, path-dependent process shaped by institutional contexts – with Schumpeterian traditions emphasizing creative destruction, the entrepreneur, and cycle dynamics.

The third part adopts a thematic focus. The first chapter presents the Cambridge controversies on capital as a conflict between paradigms, considering their implications for technological change. Two particularly relevant contributions follow: one examines

technological unemployment from Ricardo to present-day automatization; the other addresses sustainability and the tensions between innovation and the limits to growth. The final chapter offers a historical analysis of inventions that failed to become innovation, drawing on examples from Spain and Italy, in a Schumpeterian framework —. The editors' concluding remarks reiterate the connections between innovation, change, and institutions.

The historical reconstruction throughout the volume reveals several noteworthy elements. One is the persistence over time of debates concerning technology, structural change, productivity, and technological unemployment. Technological progress has consistently been viewed as both an engine of economic growth and a source of social conflict and disruption. One of the book's most valuable contributions is its demonstration that innovation is not merely a technical matter: it is shaped by institutional frameworks, affects labour relations and political power, and may generate distributional conflicts and inequality.

The book's engagement with contemporary challenges is another strength, though its publication slightly preceded the explosion of generative AI — a development that might have further nuanced its conclusions, given the extraordinary speed at which this technology has been incorporated into both productive processes and everyday life, largely driven by major tech corporations operating in a regulatory vacuum (therefore, in a quite specific institutional framework). Although the book offers pertinent and valuable reflections on contemporary issues, readers interested in these recent developments may wish for a more extensive treatment.

As with many edited volumes, this book is not free from the heterogeneity inherent to collective works — varying in analytical depth, relevance, and methodological approach — which may leave an impression of limited overall coherence. A more expanded concluding chapter might have strengthened the volume's unity. Its geographical focus is predominantly European, which is understandable, especially regarding the first two sections, given its chronological scope; future research might fruitfully extend the analysis to other regions, particularly Asia. Finally, a more systematic reflection on the concept of innovation as an analytical category could have further enhanced the volume's conceptual consistency.

These are minor shortcomings that do not detract from the book's considerable merits. It is highly recommended for economists, economic historians, and historians of economic thought interested in innovation and technological change. The volume makes an important contribution by demonstrating that these themes have been central to the evolution of the economic thought, and by linking historical economic debates to contemporary issues, paving the way for further research. We cannot but congratulate the contributors, and more so, the editors.

Javier San Julián Arrupe
Universitat de Barcelona