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*Routledge Studies in the History of Economics*

# **A CONTEMPORARY COMPREHENSIVE ECONOMIC SCIENCE**

**THE ECONOMIC THOUGHT AND  
LEGACY OF MAFFEO PANTALEONI**

Edited by  
Stefano Spalletti and Francesca Spigarelli



# A Contemporary Comprehensive Economic Science

Covering Maffeo Pantaleoni's key areas of contribution to economics, this book provides a comprehensive study of one of the foremost economic thinkers of the late 19th and early 20th centuries. Called the 'prince' of Italian economists by Piero Sraffa, among others, Maffeo Pantaleoni (1857–1924) was an original and innovative thinker but also bizarre and extravagant. As a result he did not produce an inherently continuous and systematic work, but his contributions oscillate between a shifting idealism and heterogeneous operational criteria. Contrasting with the specialisation which pervades the economic sciences today, rereading Pantaleoni one hundred years after his death, it is clear that he excelled in 'pure' as much as in 'applied' economics, in public economics as in statistical or historical-economic studies. Overall, his expertise spanned fields of economics that are now considered disaggregated and distant from each other. Thus, the Pantaleonian spirit, which was innovative and completist and could not be confined within any enclosure, was lost a century ago. This volume brings together a group of specialists capable of identifying the many points of contact between Pantaleoni's multiform thought and the disciplinary plurality of his economics – thus providing 'A Complete Economic Science' of which Pantaleoni would be proud.

The book will be of interest to economists, readers in history of economic thought, intellectual history, Italian history more broadly, and scholars with diverse profiles of interest.

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The Economic Thought and Legacy of Maffeo Pantaleoni

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and Francesca Spigarelli**

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# Introduction

*Stefano Spalletti and Francesca Spigarelli*

Maffeo Pantaleoni (1857–1924) is recognized internationally as an outstanding economist. He has been called the “prince” of Italian economists by Piero Sraffa, among others. Joseph A. Schumpeter’s judgement, certainly authoritative and balanced, describes Pantaleoni and his work as follows:

The *Principi di economia pura* (1889) will serve as a landmark. Austrian or “Austro-Walrasian” in fundamentals, enriched by Marshall’s apparatus of foreign and domestic trade (from his privately printed pamphlets of 1879), it gave an important lead away from old and toward new things. In this consists its importance, for though it is brilliantly written – Edgeworth was not wrong when he called it a “gem” – and is still worth reading, there is nothing entirely original in it. Pantaleoni’s original ideas are scattered in his papers and addresses.

(Schumpeter, 2006 [1954], p. 824)

In the contemporary context, investigating this brilliant thinker can turn into a real theoretical attraction for some scholars, even for those far away from the history of economic thought. Economists who read Pantaleoni are always surprised by the breadth of his scientific perspective and his argumentative peculiarity, often accompanied by the doubt of having correctly understood the salient elements of the discourse, together with the difficulty of ordering them in a unitary vision.

Pantaleoni was original, innovative, but also bizarre and extravagant. For this reason, despite the writing of an (innovative, precisely) manual, he did not produce an inherently continuous and systematic work. His highly original contributions move within (apparently) heterogeneous economic principles and (apparently) shifting idealism. Even though in a superficial analysis the consistency of his hedonism, individualism, liberalism, and marginalism could be questioned, his scientific path hides a very articulated coherence.

While re-reading or discovering Pantaleoni, especially in light of the complexity of the contemporary world, it is clear that he excelled somehow in multiple domains of economic thought that are now divided and ‘specialised’. He had something to say in pure as well as applied economics, in public economics as well as in statistical or historical-economic studies. In short, he envisioned a comprehensive economic science.

Looking at this sense of completeness, Pantaleoni's spirit, which was innovative and could not be confined within any enclosure, was lost a century ago. One hundred years after his death, we intend to bring the light back to Pantaleoni's economic thought, his complexity and capacity to provide a very contemporary stimulus to the discipline. We want to start from Macerata and its University. Even if he was born in Frascati (Rome), Maffeo is known as 'the economist from Macerata'. Although a professor at the University of Rome, he also taught at the University of Macerata and maintained a lifelong connection to Macerata, returning whenever possible. Indeed, Pantaleoni history, family, and experiences are intertwined to the city's history.

Exactly on the day of Pantaleoni's death (October 29), a conference was organized in 2024, bringing together several faculty members of the University of Macerata, experts in different scientific domains. The challenge was to form a team capable of identifying the many points of contact between Pantaleoni's multiform economic thought and the disciplinary plurality of the economic area, while also embracing other domains such as ethics and even computer science. Leveraging on the discussion held during the conference, this book was put forward as the contribution of economic scholar of the University of Macerata to the diffusion of Pantaleoni's thought in the new millennium.

The book chapters were crafted around three main streams of research, namely marginalism, competition and growth; governance of public and private organizations; and history and recent economic approaches. While the various contributions cover a range of topics chosen according to Pantaleoni's main fields of research, the first chapter of the book, by Stefano Spalletti, guides the reader to discover Pantaleoni's intellectual trajectory, introducing his economic thought. Pantaleoni's key scholarly contributions are examined, across themes such as hedonism, marginalism and competition, public economics and banking, history, and statistics. Spalletti also discusses Pantaleoni's international reception and the main secondary literature in recent years, in English, concerning the contributions previously discussed.

Part 1, "Marginalism, Competition, and Growth", gathers contributions which highlight the contemporary interest on Pantaleoni from different perspectives, mostly linked to mainstream areas of investigation.

Giovanola's chapter moves from Pantaleoni's well-known endorsement of hedonism to pursue a critical inquiry into neoclassical economic theory, focusing on the limits of the mainstream notions of economic rationality and *homo oeconomicus*. In developing this critique, the chapter draws on Pantaleoni's appraisal of the psychological dimension of economics and connects it to recent developments in the field of cognitive sciences that highlight the importance of cooperation. Further elaborating on the ethical implications of this critique, the chapter proposes a redefinition of the notions of economic rationality and *homo oeconomicus*, developing insights coming from Amartya Sen's capability approach.

Lampa and Oro's chapter revisits Pantaleoni's theory of political prices, examining its analytical limitations and historical context. Pantaleoni's critique of state intervention and defence of market-driven prices reflected early 20th-century liberal ideals. Post-war economists introduced more nuanced frameworks addressing market imperfections and highlighting the potential benefits of targeted state

intervention. Pantaleoni's rigid distinctions became outdated. Nonetheless, Pantaleoni's ideas, particularly in their relevance to contemporary debates on neoliberalism and laissez-faire policies, remain a crucial part of our political discourse.

Baldi, Mammana and Michetti focus on population dynamics and its influence on growth and other economic variables. Pantaleoni anticipates a number of issues that need to be addressed in studies of economic dynamics, such as static and dynamic conditions, equilibrium, and different forms of dynamic phenomena. These issues can be traced back to modern mathematical concepts developed in the field of dynamical systems theory, i.e. states of the system, asymptotic behaviours, coexistence of attractors, and complex basins.

Clementi and Fabiani's chapter revisits Pantaleoni's analysis of wealth distribution in the light of recent empirical evidence on rising inequality. It further contributes new empirical insights into wealth distribution among Italian households, drawing on data from the Bank of Italy's Survey on Household Income and Wealth. The analysis tracks changes in inequality levels over time, highlighting the social groups or classes that have gained or lost wealth. It also examines the influence of individual and household characteristics on wealth distribution patterns, offering a deeper understanding of the forces driving wealth concentration and economic polarization.

Spigarelli's chapter is a preliminary attempt to consider Pantaleoni's ideas on economic development, growth, and the role of the state, in the light of the Chinese economic transition from underdeveloped to emerging economy beginning in the 1980s. Driven by the pragmatic approach of "Socialism with Chinese Characteristics", China is a unique example of a totally planned structural change of the economy and society, where the government has leveraged some specific capitalistic measures, including fierce competition and private entrepreneurship. The specificity and uniqueness of the Chinese model might have been seen by Pantaleoni, in his latest periods, with some kind of interest, or at least curiosity.

Part 2, "Governance of Public and Private Organizations", highlights how Pantaleoni's analysis is still very relevant also in the domain of tools, approaches, and values for the government of public and private institutions. Giusepponi, Perri, and Tavoletti analyse the theme of managing public organizations by objectives, highlighting dominant decision-making logics and necessary economic competencies. Pantaleoni's interpretive web helps to understand, on the one hand, the risks of disequilibria in the exercise of power and, on the other, the indeterminateness of actors' relative positions that makes searching for a shared equilibrium the best system path. Within the frame of the power dynamics and evaluation processes analysed, the work explores the concept of merit.

In their chapter, Coppier and Quaranta examine the critical view of Pantaleoni in bank bailouts. The chapter considers Pantaleoni's analysis on the malfeasance and corruption of his time in the banking sector during both the Banca Romana scandal and the fall of the Credito Mobiliare Italiano. The authors explain the relevance of the economist's thought in relation to strategies that can be implemented in today's bank bailouts.

Lastly, Del Gobbo, Paolini, and Soverchia's chapter shows that in the area of corporate performance measurement, the totalizer index developed by Maffeo Pantaleoni can be considered a forerunner of modern scoring systems. After an

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historical contextualization, the logic of the totalizer is explained in its original version and then applied to the business context.

Part 3, “History and Recent Economic Approaches”, provides three heterogeneous contributions that bring together historical analysis with more recent stimuli from the complexity of contemporary societies.

In Zanutto’s chapter, Pantaleoni’s role as finance minister in the Reggenza Italiana del Carnaro is examined, revealing the tensions between his economic formalism and the complexities of government. The study, using ethnographic and discourse analysis, is focused on the specific challenge that the “contexts” pose to Pantaleoni’s theoretical proposals. According to the author, it demonstrates the limitations of marginalist economic theory when isolated from socio-political realities.

Croci Angelini’s chapter starts with an intriguing question: was Pantaleoni a feminist as dubbed by Pareto? The author argues that maybe he himself thought he was, yet he was not. Although Pantaleoni attended circles including feminists from his social environment and took time to support women’s issues, he did not seem to be fully sympathetic with gender equality *per se*. The very fact that he endeavoured in compiling a list of activities that women could perform, once they got the appropriate education, cannot qualify him as a feminist.

The last chapter is an unconventional experiment of Frontoni, Santini, Sernani, Spalletti, and Valentini to connect Pantaleoni to current standard AI machines, namely Large Language Models and Retrieval-Augmented Generation. Pantaleoni’s selected works are the engine of a sufficient chatbot capable of explaining the main lines of research of the economist co-founder of the current neoclassical economic system

### **Acknowledgements**

An unusual but genuine thanks goes to the authors of this volume themselves. Few knew Pantaleoni, but all of them tackled him and sought a key that would bring him closer to their own research themes –very different themes, but contained within Pantaleoni’s comprehensive overall economic science.

We are grateful to Riccardo Pantaleoni for his presence at the Conference held on October 29, 2024, and for providing materials on Pantaleoni’s work, including the genealogy of the Pantaleoni family.

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### **Reference**

Schumpeter, J.A. (2006) [1954] *History of Economic Analysis*. London: Routledge.

# Maffeo Pantaleoni's comprehensive economic science

Stefano Spalletti\*

## 1. Maffeo Pantaleoni

Maffeo Pantaleoni (1857–1924), son of Diomede, a prominent figure in the Italian Risorgimento, and Isabella Massy Dawson, an Irish noblewoman, studied in France and Germany and graduated from the University of Rome. He began his academic career at the Universities of Camerino and Macerata, before succeeding Angelo Messedaglia in the Roman chair in 1901. From 1900, he served as a deputy in the 21st Italian Legislature for a few years. In 1920, he became Minister of Finance in Fiume and supported the Fascist movement. In 1923, he was appointed Senator of the Kingdom. Over one hundred years have passed since Maffeo Pantaleoni died in Milan on 29 October 1924.<sup>1</sup>

Struggles, including fierce controversies, marked Pantaleoni's multifaceted and restless life, but his passion for economic research always drove him. He did not hesitate to criticise government policies and denounce episodes of political corruption, such as the Banca Romana scandal (1893). As a sharp and polemical publicist in favour of liberalism, his criticisms were directed primarily against the development of socialism and parliamentarism.

According to the title of his 1889 manual, *Principii di economia pura* (Engl. tr. *Pure Economics*; Pantaleoni, 1898a), a unified yet comprehensive understanding of Pantaleoni's thought emerges from the interplay between purist and non-purist components in his economic theory. *Pure economics* is distinguished by its axiomatic-deductive approach, which yields general and formally structured economic implications. In contrast, impure analysis incorporates hypotheses reflecting social systems' intricate nature, offering a different perspective.

More profound interpretations of his work remain fragmented despite the availability of at least some specialised works that are instrumental in reconstructing, quite organically, the economic thought of the Macerata scholar (Baldassarri, 1997; Bellanca and Giocoli, 1998; Bianco, 2014; Bini, 2008, 2012; Michelini, 1998; Mosca, 2015).<sup>2</sup> Except for another work highlighting the global approach to economics (Campagna, 1949), Pantaleoni's thought has not been analysed as a whole. It has experienced a first significant moment of study thanks to the contributions of the leading economists contemporary with him – some of whom regarded him as a master. This includes numerous articles published in the *Giornale degli economisti*

in March and April 1925 following his death.<sup>3</sup> Towards the end of the 1980s, the professionalisation of the history of economic thought in Italy and the subsequent emergence of some academic journals – one specifically dedicated to the history of Italian economic thought – undoubtedly facilitated the appearance of significant studies concerning this economist. These studies constitute a robust historiography that is highly valuable in guiding the reader towards an engagement with primary sources.<sup>4</sup> Finally, the bibliographical research by Augello and Michelini (1997) brings together some 75 years of studies on Pantaleoni after the economist's death (1924–1998), and Spalletti (2025) provides an update of the bibliographical research (1999–2024).<sup>5</sup>

Unlike the authors mentioned in this section, the following does not aim to offer an original interpretation of Pantaleoni's thought. Instead, it serves as an introduction to his principal scholarly contributions for those unfamiliar with his work. Given the audience of readers, our goal is to present a systematized overview of his key topics.

The final section explores the international impact of Pantaleoni's thought, taking into account how his work has been received and the recent secondary literature addressing the contributions discussed.

## 2. The economic thought

Pantaleoni does not adhere to a consistent line of reasoning and is restless, occasionally tumultuous in his approach, and frequently surprising.<sup>6</sup> Despite the complexity and articulation of his thought, some elements of continuity can be identified. One of these is the propulsive vision of economic competition, provided that it does not exclusively refer to perfectly competitive markets.

It is prevalent to reconstruct Pantaleoni's idea of competition starting from individual and "species hedonism", as defined in several writings. Still, it is necessary to refer to an evolutionary concept of competition, where natural selection, applied to social phenomena, becomes a connecting thread even in the complex twists and turns of the author's thought. Pantaleoni was not merely an economist in the strict sense of being a specialist or founder of marginalism. He emphasised the shift from economic equilibrium, namely, economic dynamics. This latter generated two possible outcomes: one that returned to equilibrium and another that did not lead to a predictable equilibrium. He then extended the economic analysis to explain political phenomena.

Despite the evolution of his scientific sensibility, Pantaleoni failed to publish a second handbook that would comprehensively systematise his thought. Instead, he felt that the time to 'gather the nets' required not a rewriting but rather a recompilation of his studies in the form of *erotemi*, i.e. works built on a challenging argumentative proposal of questions and answers, typical of his way of proceeding as a scientist. In addition, he completed his work with a volume on the history and one on the statistics and the science of finance. The two volumes of writings were published in 1936 and 1938, respectively, under the titles *Studi storici di economia* (*Historical Studies in Economics*) and *Studi di finanza e statistica* (*Studies in Finance and Statistics*) (Pantaleoni, 1936; 1938).

To adequately represent Pantaleoni's status as a scholar, it is essential to acknowledge his contributions to the significant issues of (1) hedonism, marginalism, and competition; (2) public economics and banking; and (3) history and statistics. He approached the problems driven by a personal exigency for clarity, which led him to interrogate ostensibly established tenets of thought, thereby inaugurating novel avenues of inquiry.

### 2.1. *Hedonism, marginalism, competition*

According to Pantaleoni, economics initially constituted the study of wealth, a theme that, through the evolution of the discipline, was gradually redirected towards the discovery of the laws of value. In his time, economics appeared to him more as a science in search of the laws of economic equilibrium (Pantaleoni, 1909a, p. 211). This progressive refinement is better explained in the essay "Definizione dell'Economia. Una prolusione" ("Definition of Economics. An Inaugural Lecture"; Pantaleoni, 1913), later published in *Errotemi di economia* (1925). It can be considered the origin of Pantaleoni's complex and multifaceted intellectual trajectory, which had begun at least thirty years earlier. Within this journey, a significant milestone was reached in 1909, when the scholar began to consider economic dynamics – with entry and exit fluctuations from the "zone of economic activity" as a focal point.

Pantaleoni builds the economy on the hedonistic premise, i.e. on the hypothesis "that men are actuated exclusively by the desire to realise the fullest possible satisfaction of their wants, with the least possible individual sacrifice" (Pantaleoni, 1898a, p. 3). This assumption is subject to careful and considered examination in the *Principii*, in "Cenni sul concetto di massimi edonistici individuali e collettivi" ("Notes on the Concept of Individual and Collective Hedonic Maximums"; Bertolini and Pantaleoni, 1892), and in "L'atto economico" ("The Economic Act") (Pantaleoni, 1925). Pantaleoni elaborates the theory of value on marginal utility and uses scientific analysis that preceded him, such as the elaborations of Heinrich Gossen (1854), Carl Menger (1871), and Alfred Marshall (1869), reconciling them with the Ricardian theory of the cost of production.<sup>7</sup>

History shows that human aggregations result from a long selection process, but humans engage in selfish and altruistic actions. However, the science of economics does not concern itself with environments where actions result from altruistic motives or, conversely, from predatory instincts. Within these aggregations, individuals acquire wealth with a relatively minimum cost, and it is observed that "prevailing is the pursuit of self-interest, not charity, but self-interest limited in its exercise by the absence of violence and fraud" (Pantaleoni, 1925 p. 143).

The assertion of economic hedonism from a social perspective is realised through the distinction between its two forms: individual egoism, which refers to the pursuit of personal satisfaction, and species egoism, which entails the pursuit of collective well-being for one's group, conceived as an extension of individual self-interest. Although still rooted in individual egoism, the latter improves a group's evolutionary prospects, effectively functioning as a "refined" form of egoism and

a nuanced variant of altruism. Bertolini and Pantaleoni (1892) explore the maximisation of collective interest and reveal the inherent power dynamics – such as participation, protection, or domination – through which specific individuals exert influence over others. Central to their analysis is the interplay between self-interest, collective welfare, and hierarchical structures (Dardi, 2014, pp. 498–499). From this, Pantaleoni concludes that the postulates of economic equilibrium are valid only within what he defines as the “economic zone”, that is, the domain in which the *homo oeconomicus* operates.

*Homo oeconomicus* was not an abstraction but the inevitable result of the evolution of species. The source from which Pantaleoni draws this category is undoubtedly Herbert Spencer (1879) as he points out and as his friend Antonio de Viti de Marco (1925, p. 174) explains: Pantaleoni’s numerous writings

constitute a critical and well-documented account of the historical process of disintegration to which both the political organism of the State and the economic organism of the Nation were subjected. This disintegration was driven by groups that were fragmenting and expropriating the structure of the State, each for its particular advantage.

However, this zone did not encompass the full spectrum of individual behaviour, as it was bounded by the “non-economic zone”, where the individual acted as a *homo eticus*, driven by non-hedonistic motives (Giocoli, 2003, p. 219).

Pantaleoni perceived no discordance between the theory of value and the theory of economic equilibrium, understood as the outcome of exchange relationships, production flows, and the distribution of products among the owners of factors of production. This was evident even before the development of a formal theory of economic equilibrium. The assertion that “exchanges and transformations will occur until the value of each commodity is the same for every individual within the consortium as it is for every other individual” is equivalent to arguing that “exchanges and transformations altering marginal utilities will occur until an equilibrium position has been reached” (Pantaleoni, 1913, p. 3). The former argument connects marginalism to the mode of classical economics, while the latter looks towards Marshallian economics. Pantaleoni draws inspiration also from the contributions of Cournot (1838), Jevons (1879), Walras (1889) and Edgeworth (1881). He envisioned it as a system of convergent and divergent forces operating within a mechanical structure. However, “Di alcuni fenomeni di dinamica economica” (Engl. partial tr. ‘The Phenomena of Economic Dynamics,’ 1910. Pantaleoni, 1909a, p. 213) underlines that “upon closer examination, there does not appear to be an antithesis between the concept of equilibrium in mechanics and that which is useful in biology”. After all, economists considered and utilised a concept like natural selection before scholars of biological organisms recognised its significance and relevance.

In another seminal work, “An Attempt to Analyse the Concepts of ‘Strong and Weak’ in Their Economic Connection” (Pantaleoni, 1898b), he proposes a tripartite classification of social interactions – predatory, parasitic, and mutualistic – to

interrogate the interplay of power dynamics and economic rationality. Central to his framework is the assertion that social structures, whether analysed at the micro level of individuals or the macro level of classes, are fundamentally stratified along gradients of relative strength. This stratification constitutes a foundational premise shared by both sociological inquiry and socialist critique. Parasitic equilibria, characterised by the systemic exploitation of weaker agents by stronger ones, emerge as a dominant feature of economic systems. Unlike predation – which necessitates a stark asymmetry of power – parasitism thrives under moderate differentials in strength, rendering it more pervasive.

If social systems are reducible to the locus of force, mutualistic contracts and the disciplinary autonomy of economics become precarious. The persistence of mutualistic contracts – voluntary agreements among rational agents – poses a theoretical paradox. If agents invariably assess their relative bargaining power, why would stronger actors eschew predation or parasitism in favour of cooperative equilibria? Pantaleoni resolves this tension by introducing the concept of presumptive parity of strength. Under conditions of strategic uncertainty – where agents cannot reliably quantify their relative power – mutually gainful contracts emerge as Pareto-superior in obtaining zero conflicts. Crucially, this presumption operates, even without objective parity, attempting to mitigate the transaction costs and indeterminate outcomes inherent in conflict (Pantaleoni, 1898b, p. 190).

Pantaleoni's defence of economics as a distinct field hinges on this epistemic boundary: while power relations permeate social organisation, contractual settlements represent a domain where force is procedurally neutralised. Thus, contractual systems embed an inherent dialectic: cooperation is stabilised only by the *ex-ante* institutionalisation of rules that mimic equality despite *ex-post* asymmetries. Furthermore, if contracts rely on asymmetric information about power rather than objective equilibria, the rationality of mutualism becomes contextually bounded. The indeterminacy of strength as a variable – shaped by dynamic factors such as institutional complexity and evolving bargaining capabilities – compels agents to adopt contractual conventions. In this light, Pantaleoni's analysis can save the applications of hedonic calculus: economics retains its analytical relevance not by denying power dynamics, but by modelling presumptive norms of equality to enable coordination under irreducible uncertainty.

As a heritage of classical economics, Pantaleoni prioritised freedom of contract as the fundamental liberty within the marketplace. He regarded the marginalist representation of perfect competition as a dynamic and ongoing process rather than as a static equilibrium. Consequently, he advocated for unregulated contractual relationships, arguing that any laws or regulations restricting bargaining would hinder genuine competition. The consequence is the exhibition of tolerance towards unions, syndicates, and cartels, viewing them as fluid alliances among various agents – whether entrepreneurs or workers – seeking to optimise the scale of their economic activities. In his view, these groups remained continuously subject to competitive pressures and thus contributed to the dynamic nature of the market. He contended that problems arose only when these coalitions sought stability through government protection, which ultimately began to undermine competition.

A further step invites us to reflect on a particular typology of unions: the cooperatives. How could cooperative enterprises contribute to removing what hinders the establishment of effectively competitive markets? Some ideas were suggested to Pantaleoni by his close correspondence with Pareto in 1898. There are many cases where free competition does not operate because of trade unions or inertia between competitors. When the cooperative succeeds, there is a lack of competition, and the cooperative is functional (Pareto, 1960, vol. 2, p. 131). Following Pareto, Pantaleoni challenges the thinking of the economists (Mill, Cairnes, Gide, Wollemborg) who attribute to cooperation an allocative logic opposed to the competitive one and assumes the existence and vitality of cooperative enterprises as proof of the distortion of real markets concerning competitive principles. In “Esame critico del principii teorici della cooperazione” (“Critical Examination of the Theoretical Principles of Cooperation”; Pantaleoni, 1898c, pp. 143–144), he establishes:

The alleged cooperative principles, if they were logically and universally implemented, would give the same results, i.e., would lead to the same price formation of all economic goods, as is achieved without the alleged cooperative principles, by the operation of free competition we therefore also deny any specific virtue of cooperatives as a system of social organisation, considering them merely a common form . . . of free competition, helpful when and to the extent that more perfect and intense free competition is absent, e.g., for reasons of a trust or trade union.

This also helps to understand the nature of monopoly within Pantaleoni’s complex thought. One can consider his article “Alcune osservazioni sui sindacati e sulle leghe” (“Some Observations on Syndicates and Leagues”; Pantaleoni, 1903), published in three parts in the *Giornale degli economisti* from March to December 1903, and the interpretation of trusts’ nature concerning classical monopolies. Pantaleoni observes that among the many conditions that define an enterprise, two are particularly relevant: its size, and the degree of relationships it has with other enterprises. These two characteristics are important because “it is under penalty of succumbing in the economic struggle that *the most useful size* must be found, and it is under penalty of succumbing that the cement that unites an economic complex must be found” (Pantaleoni, 1903, p. 250, emphasis added). Syndicates provide enterprises with the most convenient size and create links and cohesion between them, i.e., building organisations Pantaleoni defines as “economic complexes”. If legislation protecting a particular group of people is in place, the market falls into a logical economic error. In a market economy, there is no way to limit monopolies: “to let them be beaten by competition, which is a force that acts intermittently” (Atti Parlamentari, Camera dei Deputati, 23 November 1900, p. 401).<sup>8</sup> In other words, syndicates can form without problems. “Syndicates can even present a notable public advantage, a notable advantage for the consumer because a syndicate generally brings a reduction in general expenses” (Atti Parlamentari, Camera dei Deputati, 23 November 1900, p. 401). It is a matter of accepting a dynamic concept of competition, which determines the ability to realise organisational and competitive

innovations. The realisation of large profits by colluding enterprises can attract new enterprises to a particular sector, making the previous syndicate agreement weak and sometimes accompanied by a tendency for prices to fall. Accepting policies in favour of a class is, instead, a way of acting that delegitimises politics. Politicians should not promulgate laws against syndicates, of any enterprise, or against or in favour of workers united in groups. For Pantaleoni, it is not helpful to contrast economic entities that, on their own, “use syndication!” (Atti Parlamentari, Camera dei Deputati, 23 November 1900, p. 401).

The monopolistic power of the economic complexes and the tendency towards agreements between enterprises is seen as an expression of rational practice, which, with its extension and diffusion, would confirm the suppression of the atomistic market. However, Pantaleoni identifies the system’s contradictions as a product of sociological becoming. He goes beyond the limits of pure economic science, which does not have the suppression of the market as its goal. He follows the analysis of the factors of second-generation dynamism, i.e., those factors that agitate the system and prevent it from returning to the previous economic equilibrium. They represent, in fact, the central element in analysing social dynamics. Pantaleoni goes on to argue that “a monopolistic equilibrium is pregnant with dynamism; it is a terrain mined with dynamite; a competitive equilibrium regenerates itself at every moment; it has perpetual vitality” (Pantaleoni, 1909a, p. 217, fn. 1).<sup>9</sup>

Competitive equilibrium’s regeneration capability is also developed in “Il secolo ventesimo secondo un individualista” (“The 20th Century According to an Individualist”; Pantaleoni, 1907a) as a pre-Schumpeterian vision. In fact,

at some point in the global market, an initiative emerges – be it a scientific discovery, the invention of a technical process, or the creation of a new method of social organisation. This initiative yields a surplus income for its originator, not extracted from others but derived from overcoming the resistance of nature. This surplus income will take a monetary form concerning commerce, industry, and other forms of power, glory, or pleasure if it operates in the political, intellectual, or artistic spheres. The surplus income achieved in this manner attracts competitors – imitators, improvers, and disseminators – and, regardless of its form, it spreads to a broader circle of individuals, much like concentric ripples expanding outward from the initial epicentre of a volcanic eruption.

(Pantaleoni, 1900, pp. 272–273)

Competition is always a driving force behind the emergence of new knowledge and organisational structures, which, in turn, shape further transformations in the market. The concept of market competition does not settle into equilibrium; instead, it perpetuates itself through the continuous innovative actions of entrepreneurs. As markets expand, the social reputation of entrepreneurs is reinforced, thereby broadening the sphere of contractual relationships at the expense of political and affective relations (Bini, 2021, pp. 93–94).

Such an economic dynamic, according to Pantaleoni, is preferable to socialism, also in the economic crisis perspective. The ever-increasing potential of instability of modern economies is caused by fixed assets with public regulation or state intervention, let alone socialistic measures (Bini, 2017, p. 44). Even if syndicalism proves more effective than socialism in advocating for the management of industry by workers, Pantaleoni contrasts it with the virtues of a particular evolution of entrepreneurship. As conceived in economic theory, the entrepreneur is not merely an individual but rather an abstraction. Instead, “an entire group of individuals working within a single enterprise collectively embodies the characteristics attributed to the theoretical entrepreneur – that is, they organise, direct, and combine factors of production. The real entrepreneur is a diffused entity” (Pantaleoni, 1909b, p. 7).

## 2.2. *Public economics and banking*

Italian marginalism exhibited several distinctive features. One of the most prominent, particularly evident in Pantaleoni’s approach, was a strong focus on public finance, which served as a means to reflect on the nature of the state and the effects of public decision-making. Indeed, the Italian tradition of “Scienza delle finanze” (the science of public finance) held a prominent position within the national economic discourse and gained significant international recognition (Fauci, 2014, p. 128), mainly through Pantaleoni’s contributions. His first major work was the *Teoria della traslazione dei tributi. Definizione, dinamica e ubiquità della traslazione* (*Tax translation theory. Definition, dynamics and ubiquity of translation*; Pantaleoni, 1882). It provides a comprehensive definition of the various effects of taxation and examines the main conclusions of the traditional theory of tax shifting. Pantaleoni based his analysis on the cost of production theory and devoted a significant portion of his study to the theory of value, successfully addressing the incidence of some of the most important taxes. Published when Pantaleoni was 25 years of age, this work remained one of the foundational contributions to the systematic study of the economic effects of taxation for a long time. At least until 1902, it was regarded as the most comprehensive study on the subject published up to that point, despite receiving little attention outside Italy (Seligman, 1902, p. 167).

In his “Contributo alla teoria del riparto delle spese pubbliche” (Engl. tr. “Contribution to the Theory of the Distribution of Public Expenditure”, 1958; Pantaleoni, 1883), Pantaleoni was among the first economists to apply the theoretical framework of marginalist economics to fiscal issues. Drawing on the developments of Jevons (1879) and Walras (1878), he favoured the former, as Jevons based his theory on the concept of the degree of utility, that is, the differentials of utility considered as a function of the quantity of goods. Pantaleoni argued that Jevons’s approach was more effective and comprehensible than Walras’s notion of “intensity of utility derived from actual utility about the quantity of goods possessed” (Pantaleoni, 1883, p. 26). On this utilitarian basis, Pantaleoni formulated the general principle of distributing the tax burden among citizens and maximising the benefits

of public expenditure. He attributed the ability of parliamentary representatives to establish and adhere to collective hedonic maxima. He argued that the expenditure side represents the sum of satisfactions (of needs), which is set against the total sacrifice imposed by taxation. The total satisfaction must be at least equal to the total sacrifice. This balance, he maintained, should be determined in the legislator's mind by the average intelligence of Parliament.

Pantaleoni knows that Parliament cannot determine whether a specific expenditure is admissible without relying on complex factors. The decision-making process involves the classification of marginal utilities derived from various expenses and comparing these utilities with the sacrifice imposed by taxation for every possible combination of expenditures (Fausto, 2003, p. 12). In this formulation, under an absolute government, the state budget would coincide with the budget of the autocrat. In contrast, in democratic governments, the budget results from the actions of a certain number of individuals acting as representatives of the average taste and intelligence of the time. The legislative chambers constitute the collective average individual, standing in place of the entire population in expressing its judgements.

Replacing the judgement of legislative bodies with that of an increasingly universal electorate implies recognising that the well-being of each person must be judged by the individual himself/herself rather than by another on his/her behalf. Therefore, managing the nation's interests would become an endless administration of individual interests, in which the total sum would, in some way, constitute the national interest (Cosciani, 1976, p. 338).

Pantaleoni's framework conceives public finance as a mainly economic phenomenon, presupposing that individuals are fully aware of their utility function (the previously discussed hedonism). However, experience also highlights different forms of awareness, not "purely" economic, from individual relationships. Indeed, some relationships can reveal coercive elements stemming from the coexistence of weak and strong actors within the social system. The strong may exercise their power through predatory or parasitic agreements. A predatory agreement leads to the disappearance of the weak, rendering the social arrangement entirely transient. On the other hand, a parasitic agreement is based on the survival of the weak, who can be exploited; this latter model is prevalent in social arrangements. There are also protective relationships aimed at safeguarding the interests of specific individuals as perceived by the protector. These relationships still imply a division between strong and weak actors. Finally, there are contractual or legal relationships in which neither violence nor altruism is present. These are relationships based on the theoretical premise of equality between the contracting parties, although the initial positions of the parties may differ.

Pantaleoni's "Nota sui caratteri delle posizioni iniziali e sull'influenza che le posizioni iniziali esercitano sulle terminali" ("Note on the Characters of Initial Positions and the Influence of Initial Positions on Terminals"; Pantaleoni, 1901, p. 334) clearly links individuals' positions (whether weak or strong) to legislative arbitrariness. He argues that these initial positions, in relation to a specific goal, are easily altered by laws or regulations that can shape or reshape them.