

***Interpreting the path of Italian economic thought: the contribution of
Eraldo Fossati***

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1. Introduction

In a contribution published some years ago, Pier Luigi Porta (2004) tried to explore the main features of Italian economic thought in the period before and after the Second World War. The main aim was to respond to some criticism put forward against the community of Italian economists. Porta intended to advance the idea that the shared opinion that Italian economists were only interested in the theoretical and abstract aspects of the discipline, neglected the concrete aspects of economic policy, and deviated widely from the international literature was in fact misleading. On the contrary, in his opinion in the period considered, Italian economists formed a vital research community, well inserted in the international community and able to obtain relevant achievements in many directions.

A paradigmatic case supporting Porta thesis's has been the figure of Eraldo Fossati (1900-1962). With Giuseppe Palomba and Giulio La Volpe, Fossati was one of the most relevant exponents of the second-generation Paretians in Italy. Whereas the latter are quite well known, the contribution of Fossati (due in part to his untimely death) is less considered in the literature (Fusco, 1977). Another economist of the Paretian circle who deserves more attention was Arrigo Bordin. This second generation of post-Paretian scholars made important contributions to the renewal of economic theory in Italy. They were confronted with the main achievements of their time: the Paretian heritage, the corporatist phase, and the theoretical developments of the post-war era, mainly the Keynesian revolution. Each of them provided important contributions to shape the characteristics of

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Italian economic thought. In this article, we focus on the contribution of Fossati.

2. Fossati as Paretian economist: from statics to dynamics

During the first half of the 1900s, Paretian economists were a recognizable group of scholars in Italy, at least until the years following the Second World War (Schumpeter 1954, Fuà 1970, McLure 2007). It is possible to distinguish two different phases in the evolution of Pareto followers in Italy (de Pietri Tonelli 1936). The first one consisted of the formation and consolidation of the Paretian circle, covering a period that lasted until the beginning of the 1920s. The names to take in consideration in this period include Pasquale Boninsegni (1869-1939), Guido Sensini (1879-1958), Luigi Amoroso (1886-1965), Alfonso de Pietri-Tonelli (1883-1952), Gino Borgatta (1888-1948), Felice Vinci (1890-1962), Roberto Murray, and Vladimiro Furlan. The Paretian movement in Italy reached its mature phase in the 1930s. New scholars added to the original group. These were no longer people who had had direct contact with Pareto but students of Pareto's first followers. The main protagonists were Giulio La Volpe (1909-1996), Eraldo Fossati (1902-1962), Arrigo Bordin (1898-1963), Alfonso De Pietri Tonelli (1883-1952), Felice Vinci (1890-1962), and Giuseppe Palomba (1908-1986). This was the golden age of the Paretian economist, during which the most important theoretical results were accomplished. The contributions of its members were published in the most prestigious international journals. Amoroso was recognized as the most important Italian mathematical economist, and he was involved in the creation of the *Econometric Society*. After the Second World War, the Paretian tradition entered into a phase of rapid decline, and within a few years, it was even marginalized in Italy (Graziani 1991). The group of Pareto followers basically concentrated their theoretical efforts on four areas of interest or research programs: the development of general equilibrium theory, the formal construction of economic dynamics, the theory of non-competitive markets, and the economics of corporatism.

The general economic equilibrium of Pareto was the essential background of the Paretian School. All Paretian economists published on this topic with the aim of clarifying or better exposing the mathematical theory of general equilibrium. In this kind of project,

Fossati did have a relevant role. His book, *Elementi di economia razionale. La statica* (1946) was the only one translated into English, with the title, *The Theory of General Static Equilibrium*. The translation contained a preface by Shackle, which stated that the aim of the book was to provide English-speaking scholars with an account of the Paretian theory of general economic equilibrium. In the years of the axiomatic revolution, Fossati and other Paretians remained loyal to the traditional approach.

If the static theory was a topic that was well established, the new field of research that emerged in the thirties was the dynamic aspects of the general equilibrium. The main theoretical problem in the interwar period was the extension of the general equilibrium to the dynamics (Demaria 1930). The most important strands in the general debate was the dynamic equilibrium approach, developed in the United States by two mathematicians, Griffith Evans and his student at the Rice Institute, Charles Ross (Pomini 2018). In Italy, the dynamic equilibrium approach became the principal area of inquiry for Paretian economists. During the 1930s, they made major contributions with the works of Amoroso (1939, 1942) and La Volpe (1936, 1938). The characteristic element of the Paretian approach was the explicit introduction of the intertemporal utility function. They extended the static utility function to include the time element, following the Austrian tradition, as shown for instance by Rosenstein-Rodan in his 1934 *The Role of Time in Economic Theory*. Amoroso and La Volpe solved the problem of intertemporal optimization by directly applying the techniques of the calculus of variations.

Furthermore, Fossati was an economist with a strong mathematical background. He tackled the analytical problem of building economic dynamics by using a different approach, namely, the Wieser-Mayer subjective approach. The first contribution was the article *Ricerca elazioni tra tempo e utilità* (1937). The final version was the article *Della teoria dinamica* (1949), published in *Giornale degli economisti e Annali di Economia*. Fossati also shared the idea that in dynamic analysis, the economic calculus has to be extended to encompass the entire planning horizon of the economic agent. What was distinctive about his approach was its emphasis on what can be called "structural uncertainty," that is, a lack of knowledge on the part of the economic agent about the structure of the economic problem that the agent faces. Economic inquiry becomes dynamic not because of time variations

but rather as an inevitable consequence of our ignorance about the future²

Fossati developed this central dynamic theory based on the subjective dimension of expectations by formalizing the subjective uncertainty in the intertemporal equilibrium within the Austrian setting. The main purpose was to build a formal intertemporal model of general equilibrium. He viewed the future as fundamentally unknowable and criticized the probability theory as applied to decision-making for failing to consider this fundamental ignorance. The construction of the probability calculus relies on certain knowledge regarding the structure of the world, whereas in reality agents do not have such knowledge about the states of the world. According to Fossati, any action that we begin in the present may have any one of a large number of possible outcomes, which if they occur, may affect the conditions of our future action and our future means, thus leaving little room for the constancy of variables. The ignorance is a cost that cannot be evaluated correctly in advance.

In light of Fossati's main theoretical contributions to economic dynamics published in the 1930s, we may ask whether he succeeded in giving the Paretian theory a dynamic development. Looking at purely analytical aspects, Fossati was less innovative than the other exponents of the Paretian school. Whereas the systematic use of differential calculus as opposed to functional calculus put Amoroso and La Volpe at the frontier of research into dynamic economics, Fossati ignored these new mathematical tools. From the mathematical perspective, his model is only superficially dynamic. It is in fact wholly static because time acts as a completely exogenous variable. Moreover, epistemological limits were derived from the difficulty of building economic dynamics on the categories drawn from subjective uncertainty as an *ad hoc* exogenous variable. In Fossati's work, there is no effort to obtain a microeconomic foundation for decisions in a context of uncertainty. It is no coincidence that this approach based on a radical subjectivism was largely undeveloped at an international level, if we exclude Shackle's contribution, to which Fossati gave considerable credit as editor of *Metroeconomica*.

3. Fossati and the corporatist turn

² An analysis of the Fossati's dynamic model is developed in Pomini, 2007.

The profound economic crisis that occurred in the interwar period forced economists to look in different directions. One of these was corporative economic theory, which was understood as a theory asserting the fundamental role of the state in economic affairs (Almodovar and Cardoso 2005). The protagonists in this attempt to integrate corporatism into economic science in Italy were Luigi Amoroso, Giulio La Volpe, Eraldo Fossati, Gustavo Del Vecchio, Marco Fanno, Giuseppe Ugo Papi, and Guglielmo Masci, leading economists who adhered to both Marshallian and Paretian traditions. This effort to reconcile the nebulous theories of *homus corporativus* with those inherited from Pantaleoni and Pareto was an important, though minimally studied, episode in the history of Italian economic thought that is worth considering.

It has been observed that corporatism cannot be considered as a coherent doctrine but rather as a wide and nonhomogeneous cultural setting (Faucci 1990). This consideration also applies to the specific element of the economic theory of corporatism. As observed by Bruguier Pacini (1936), it was only in 1930 starting with the *XII Meeting of the Italian Society for the Progress of Sciences* that Italian academic economists recognized corporatism as a field of scientific investigation. Studies on corporatism had failed to attract analytical economists during the second half of the 1920s. *Giornale degli Economisti*, the official journal of economists, continued at that time to deal with traditional doctrinal issues, and the first articles on corporatism appeared only at the beginning of 1930. A sort of tacit consensus was created: Economists could carry out their research along traditional lines, provided they did not openly express their dissent against the fascist regime. Academic economists approached corporatism as an economic theory when the internal debate of truly corporatist scholars ended, without however arriving at a synthesis of the various positions (Mancini, Perillo and Zagari 1982).

What we can term the *corporatist turn* of Italian academic (and *laissez-faire*) economists occurred in the mid-1930s. The theoretical ground had been prepared by Amoroso in an article written in 1934 with De Stefani, *La logica del sistema corporativo*, which forcefully argued that corporatist economic theory was not substantially different from traditional theory, but rather differed in its development in the historical dimension. Another important contribution in the same year was the article *L'ordine corporativo*, written in collaboration with Guglielmo Masci, in which the corporatist system was presented as the on-

ly possible remedy to the problems produced by banking and industrial concentrations. Also worth consideration was the contribution made, still in the same year, in *Il Giornale degli Economisti* by Francesco Vito, entitled *Sui caratteri dell'economia corporativa*. It focused more on philosophical aspects and in particular on overcoming the individualistic perspective in the corporatist view. Thus, 1934 can be considered the year from which the scientific attention of academic economists to corporatist economic theory materialized. In the following years, writings on corporatist economics increased exponentially and were not be relegated only to journals close to the regime. Moreover, in that same year, with the creation of the *Corporazioni*, envisaged as early as 1926 but never implemented, the corporative system moved out of the purely doctrinal debate. The *Corporazioni* were intended to be the regime's principal institutional innovation in economic policy, and this required scientific interpretation on the part of economists.

Fossati contributed to the debate on corporatist economy in some way. His writing on this topic are few and represent a minor research path. A first article was published in *Giornale degli Economisti* with the title *Linee di studio dell'economia corporativa* (1935). In this early writing, Fossati agreed with the corporatist idea that economic crisis was a result of the anarchic forces of the market, in the sense that in a capitalistic system it was impossible to obtain the full employment of resources. The reason for this deficiency was due to the fact that the economic system was a dynamic entity. In the new dynamic setting, the action of free competition was no longer able to guarantee the achievement of an intertemporal equilibrium between investments and savings, resulting in high unemployment. Therefore, there existed a need for coordination by the institutions of a corporatist regime. According to him:

The corporatist economy equilibrates the production, realizing the balance between production and consumption in the short periods, thanks to the regulation of the immediate process of production, and in the long periods through the control of industrial plants with the aim to maintain a stable relationship to the development of the productive apparatus with the conditions required by the situation of the economy. (Fossati 1937, 77)

The brief essay ended with an interesting observation. Even Fossati referred to the necessity for empirical verification that the costs of the corporate bureaucratic apparatus was lower than the damage caused

by market anarchy: a point also well expressed by Fanno in his book, *Lezioni di Economia Corporativa*. In these two contributions, Fossati took the thesis of Fanno and Papi and inserted them into his vision of economic dynamics characterized by a radical uncertainty impossible to quantify. Deprived of any solid analytical base, unlike Fossati's other contributions from the same period, the 1937 monograph can be considered as a text tied to the needs of the moment and useful to his academic career but not containing new and original scientific results.

The more interesting contribution in the field to corporatist economy was the article *Economia corporativa e principio autarchico* (1939). It was not the usual ideological position on the need to encourage or defend national production, but rather a successful synthesis of the *General Theory* that he analysed through corporatist lens. This encounter with Keynesian ideas would not be an episodic element in Fossati but became the new path followed after the war. The starting point was the usual observation that "the liberal economy in its living reality presents a state of chronological under-production" (p. 364). The reason of this was not the traditional imbalance between savings and investments. Fossati utilized the new approach based on the lack of aggregate demand. Following the genuinely Keynesian scheme, he highlighted the negative consequences of an excess of savings. As for Keynes, in the capitalism of the industrial and financial concentration of his time, there was no automatism that linked consumption expenditure to investment: Lower consumption expenditure did not automatically translate into greater investment spending but rather generated a fall in demand and thus increased unemployment. In his words:

It stands against classic positions that do not evaluate savings as a contraction of demand for consumer goods, not necessarily compensated by the expansion of demand for production goods, and that do not consider how it has its main source rather in the investment, in turn dependent on consumption, rather than in the simple individual abstinence, expected that this is a function of income, which strictly depends on the development of investments. (Fossati 1939, p. 367)

This passage clarifies how Fossati had fully grasped the message of Keynesian thought. Aggregate saving was not an autonomous element but depended on income and by extension on investment spending. Every automatism that led to the equality of investments and savings was bro-

ken, and the result was a chronic underemployment of the factors of production. To get out of this situation, wide intervention of the state and a strong policy of wealth redistribution was necessary. This Keynesian perspective allowed Fossati to look at the autarchic principle differently. This principle, in his vision, was not only the search for economic self-sufficiency in production, but it also justified the need for a wide state intervention, especially in the field of public investments to support economic activity in a phase of economic depression.

Probably, the true corporatist writing of Fossati was the book entitled *New Deal* (1937). It contained a detailed analysis of the economic measures advanced by the Roosevelt Administration to overcome the *Great Depression*. For Fossati, the economic policy put forward by Roosevelt was a concrete demonstration of the failure of liberal capitalism. He observed in the conclusion that the *New Deal* was the first but incomplete step towards a planned economy. The corporatist economy was the final answer to the problems of the monopolistic setting of the economic system.

The attempt to include in the corporatist approach some elements of *General Theory* would remain an isolated attempt among the Paretians, and not only among them. For example, Palomba in the article *L'economia keynesiana in Italia* (1950) considered the *General Theory* too simple from a mathematical point of view. We would have to wait a few more decades to see a complete reception of Keynesian ideas in Italy. Fossati followed an entirely different path. His idea of the relevance of the economic role of the state found a scientific foundation in Keynesian theory.

4. A new journal: *Metroeconomica*

In the post-war period, he contributed to the renewal of economic theory in Italy by founding *Metroeconomica*, a journal that he edited until his unexpected death in 1962. Fossati decided to start the new journal in 1948 during the Econometrics Conference held at The Hague (Netherlands), and the first issue of *Metroeconomica* was published the following year. It was a quarterly journal, which Fossati edited until 1962, the year of his sudden demise. In his introduction to the journal, Fossati stated the two main features that it should possess: a strong quantitative orientation and complete openness to international

economic thought. As to the former aspect, in the foreword to the first issue Fossati wrote the following:

The subject of the review is summed up by its very name *Metroeconomica* which lays the stress on the quantitative nature of economics. Hence, necessarily so, the nature of the fundamental method to which it has recourse: the mathematical method (Fossati, 1949, p. 2).

This quantitative nature of economics consisted of two aspects. The first was the traditional one, which derived from the School of Lausanne in the wake of Walras's and Pareto's contention that economic relations should be investigated using the most advanced mathematical tools available but without lapsing into arid formalism. Under Fossati's editorship, the journal published important contributions to economic analysis by authors at the forefront of the international debate, most notably G. Debreu, K. Arrow, M. Allais, R. Roy, M. Morishima, H. Nikaido, T. Negishi, D. Patinkin, and G. L.S. Shackle. Among the numerous studies published, particular mention should be made of Negishi's "Welfare Economics and Existence of an Equilibrium for a Competitive Economy" (1960), which contained an original formalization on the modes of constructing general economic equilibrium.

However, there was a second aspect that defined the journal's character under Fossati's editorship: the ample space that it devoted to statistical research and econometrics. Fossati was one of the first economists in Italy to grasp the importance of empirical analysis in economics, which he also sought to promote at the university level by creating the first chair of econometrics in Italy at the University of Genoa in 1956. In this regard, *Metroeconomica* published important articles by R. Frisch, J. Tinbergen, G. Tintner, and H. Theil. It may be said that in both the analytical and statistical fields of quantitative research, the new journal soon acquired an outstanding international reputation.

No less important was a different aspect: the journal's openness to the international economic community. This was a characteristic that from the outset distinguished *Metroeconomica* from other Italian journals. Its marked internationalism transpired not only from the fact that contributions by Italian economists were numerically negligible during Fossati's editorship but also that some of the most prestigious European and American economists sat on its editorial

board. The initial members (C. Bresciani-Turroni, L. Dupriez, R. Frisch, G. Lutfalla, A. Marget, U. Papi, E. Schneider, J. Tinbergen, G. Tintner, and F. Zeuthen) were later joined by R. Roy, W. Leontief, and J. Marschak. In 1951, Shackle became a member as well. In order to safeguard the journal's international scope, articles were published in various languages: French, English, German, and Italian.

A brief inspection of the topics covered by the journal shows that Fossati placed great importance on the theory of the consumer and of demand in both theoretical and econometric aspects. Another privileged area of research was monetary theory, which was analyzed from both historical and analytical perspectives. Moreover, there was no lack of studies on methodology and the history of economic analysis in relation to Fossati's formation in Paretian theory. The journal also demonstrated substantial interest in dynamic phenomena, first at the microeconomic level and then at the macroeconomic level. Finally, Fossati devoted ample space to contributions on the theory of uncertainty and risk, privileging the perspective adopted by Shackle.

To summarize, we may say that Fossati, an unassuming yet tenacious intellectual (Papi, 1962), succeeded in his project to create a new journal that would transmit "a message of faith in the union of scholars seeking the truth" (Fossati, 1949, p.3) after the turmoil of the Second World War. As a Paretian, he gave the new journal two essential features: a solid analytical stance and a commitment to identifying empirical regularities through quantitative research.

5. The Keynesian turn: the scientific foundation of economic policy (*politica economica*)

Fossati contributed to the renewal of Italian economic thought not only by editing a new journal. The mature phase of his research was characterized by the full adoption of Keynesian theory. This change of perspective is represented by *Elementi di Politica Economica Rationale*, the book collecting his lectures on economic policy at the University of Genova and one on the first books explaining the content of *General Theory* in the Italian context. Fossati tried to argue that the Keynesian theory could be considered as the scientific part of economic policy.

The title of the book can be understood only considering the evolution of economic policy as a scientific topic inside the Italian tradition. At the beginning of the 1900s, economic theory as a

scientific discipline initially found a place in the faculties of law. Almost every faculty of law offered two types of economic courses: *Economia politica*, basically a course of microeconomics, and *Scienza delle finanze*, a course devoted to taxation and the economic role of the state. Outside the universities, the process of economic development that took place in the second half of the nineteenth century in Italy raised the need to create specialized commercial schools, the *Scuole Superiori di Commercio*. The first was founded in Venice in 1868, and within a few decades, other *Scuole* were founded in many other cities. These schools offered a professional vocation, and even the topics of the curriculum had a strong practical character. In this new practical context, a new academic course was created: *Politica Commerciale e Legislazione Commerciale*. It was dedicated to the problems of commercial trades and applied economics. From this first relatively limited nucleus evolved in Italy, economic policy emerged as an academic discipline with the denomination of *Politica Economica*. Soon enough, this new topic became a fundamental part of the curriculum of the new faculties of the political sciences created by the fascist regime. Many academic textbooks appeared; among those that had a notable success was that of Fontana Russo (1935) and his pupil O. Fantini (1939). From these textbooks, a variety of considered issues could be observed: They spanned from demographic to commercial policy, from banking and credit policy to transport policy, and from antitrust policy to labor discipline. It was a difficult task to define what was the scientific element of economic policy compared to the two established related disciplines, economics and the science of finance.

An important contribution to the scientific foundation of economic policy was provided in the period between the two world wars by Gustavo Del Vecchio, one of the most important exponents of the Marshallian tradition in Italy in the second part of his text, *Lezioni di economia applicata* (1933). In his view, there was no doubt that the latter's task consisted of studying the consequences of state action in the economic system. In concrete economic life, public action took a variety of forms, and the economic analysis of these interventions constituted for Del Vecchio the field of investigation proper to economic policy. Del Vecchio explicitly excluded the possibility of public action in other fields, such as the redistribution of wealth, if not to eradicate extreme forms of poverty. For Del Vecchio, there

was not, nor could have existed, a pure theory of economic policy, that is, a theoretical discipline with the same rigor of a pure economy.

Economic policy in its vision and also in that of the other economists who occupied the university teachings was characterized by the need to recover the concrete and applicative dimension that the rigorous analytical foundation of the economic discourse had overshadowed and completely neglected. Hence its descriptive and phenomenological character and the reason for the wide spectrum of subjects that characterized its field of investigation. Ultimately, therefore, we can say that the notion of economic policy had in Del Vecchio, but also in the economists who dealt with it in the period between the two wars, a residual character and was lacking in a solid theoretical basis (Parrillo, 1957, p.93-98).

After the second war world and the failure in Italy of the corporatist experiment, a debate flourished regarding the scientific foundation of economic policy. In the discussion, three main positions emerged. The first one was the traditional, which was based on the market failures represented by Costantino Bresciani Turrone in his *Introduzione alla politica economica* (1942). The second strand of research followed the progress in welfare economics. Important contributions in this field came from Paretian economists, such as Giulio La Volpe (La Volpe 1948), but its main proponents were Siro Lombardini and Federico Caffè. The first, a pupil of Francesco Vito, published an important monograph, *Fondamenti e problemi dell'economia el benessere* (1954), which introduced into the Italian context the new terms of the international debate with the passage from the utilitarian approach of Pigou (the old welfare economy) to the axiomatic one operated by Bergson but above all by Samuelson (the new welfare economy). At the end of his detailed review, Lombardini's judgment remained substantially critical of new theoretical developments: If the new welfare economy with the return to the Pareto approach had contributed to solving some epistemological difficulties contained in the previous approach, it appeared more a refined logical construct than a theoretical tool that could offer practical suggestions for public action. Subsequently, Lombardini abandoned the theoretical aspects of the welfare economy to devote himself to the problems of economic planning, a topic then very much felt in the context of the Italian debate. Caffè's contribution was more

substantial. The latter not only dealt with the welfare economy in numerous writings (1955, 1956, 1966, 1970, and 1978) in all his major works, but above all, he used a critical analysis of these last to realize the ambitious project of providing a rigorous theoretical foundation to economic policy.

A third path to offer a scientific status to economic policy was the introduction of macroeconomic Keynesian theory. Fossati provided this project an important contribution. He took a very specific approach in trying to integrate Pareto and Keynes. This idea was already present in the essay of 1949, *Vilfredo Pareto and J. M. Keynes: One or Two Economic Systems?*, and it was expressed widely in *Elementi di Politica Economica Razionale*.

This text, which consisted partly of university lectures and partly of previously published articles, had several purposes. However, its central intent was to show that the Keynesian approach was a turning point in the development of economic policy because it opened new horizons and resolved old problems, such as the inclusion of money in the schemes of general economic equilibrium theory. It was divided into three parts: an introductory part devoted to the customary exposition of Pareto's theory on general economic equilibrium; a central part containing a detailed presentation of the Keynesian theory, mainly as regards monetary aspects; and a third empirical part devoted to discussion of the problems raised by application of the econometric method. The fact that Fossati used the expression "rational economic policy" in the title is unsurprising because the book was a further attempt to demonstrate continuity with the "rational economics" espoused by the Paretians. The rational aspect of economic policy derived, as in the case of individual choices, from the fact that the state must resolve the problem of the optimal allocation of resources.

The first part is interesting because besides the usual exposition of the blocks of equations of the general economic equilibrium, Fossati addressed the complex problem of aggregation, whose solution allowed one to pass from microeconomic analysis to aggregate analysis. Nevertheless, for our purposes here, the most significant passage in the book was the second part of Chapter VI, entitled *Significato dell'opera Keynesiana alla luce della teoria dell'equilibrio economico generale*. Here, Fossati addressed the problem of the relationship between the two theoretical systems. After noting that despite almost

twenty years of discussion, the dispute in Italy on the value of the Keynesian theory had not yet subsided, he described its overall argument, seeking elements of compatibility between the two systems of thought:

For some years I have asked myself why we must continue to divide ourselves between Keynesians and anti-Keynesians, without realizing that, in truth, if we assert a contrast of this kind, we affirm only an apparent contrast, because an equilibrium with full employment cannot be opposed to an equilibrium without full employment. And this is for the obvious reason that no contrast can exist between two terms that are not comparable. Which prompts the question of whether we should not instead address the problem of how to integrate these two systems. To tell the truth, we need to recognize that if we reject the scientific contribution that Keynes has left us in order to defend the tradition, this will impoverish our thought to the same extent as would happen if we rejected the heritage that the tradition has bequeathed us. (Fossati, 1955, p. 90)

For Fossati, the Paretian and Keynesian systems were (to use the terminology of the philosopher of science T. Kuhn) two incommensurable scientific paradigms because they were based on different presuppositions and methodologies. However, paradoxically, precisely for this reason, they may be two complementary paradigms, equally essential for understanding the workings of economic systems. The Paretian theory because of its static nature, hypothesized that the system was able to achieve full employment automatically thanks to the perfect flexibility of prices; by contrast, the Keynesian theory, as the first step towards a dynamic account, assumed that there can be equilibrium with unemployment, because a part of income remains idle in the form of a liquid reserve. From this perspective, if economic science was not to be deprived of the most significant contributions, it must entertain the idea that Keynes' theory could be considered a natural integration of general equilibrium theory (Fossati, 1955, p. 90). On addressing the crucial issue of the saving/investment nexus, Fossati wrote the following:

One thus sees the full *inversion* of the Keynesian conception and the absolute absence of possible conflict between the two conceptions, the Keynesian and the traditional ones, that have provoked so many disputes on applicative grounds in these years. For if one posits the problems of the static account, the dominant role of saving ensues; if the same problems are posited by the

dynamic account, there naturally ensues the dominant role of investment. (Fossati, 1955, p. 103)

Hence, the prevalence of savings over investments or vice versa, one of the crucial issues in the theoretical dispute, should not be considered in absolute terms but rather evaluated according to the point of view that interests the analyst, with the former being static and the latter being dynamic. In his essay of 1955, Fossati further clarified that the bridge between Pareto and Keynes lay in monetary analysis, the logical basis for a critique of the law of markets. The Mill-Say Law, which Fossati described as a cornerstone of the traditional theory, assumes an elementary economy based on barter, but it is entirely inadequate in the case of modern economies, in which money performs functions other than that of a means to facilitate transactions.

It should be pointed out that Fossati's adherence to Keynesian theory was not induced by theoretical considerations alone. It also stemmed from his civic commitment to resolving Italy's economic difficulties at the time. He frequently intervened in the columns of daily newspapers to debate current economic issues. This correspondence was collected in *Problemi dei Nostri Giorni* (Fossati, 1959), which he considered not a minor work but rather an application of the theoretical principles set out in *Elementi di Politica Economica Razionale*. In this regard, it completes the said *Elementi* as a deliberate response to the current claim that theorists are unconcerned with concrete facts, which is a wholly contradictory assertion, given that theory is born from concrete facts and must be tested against them" (1959, p. 5). To be cited, for instance, is a newspaper column of April 1946, *Con Keynes o Contro Keynes*, in which he criticized C. Bresciani-Turroni's thesis that the cause of Italy's economic problems was, according to the neoclassical orthodoxy, the insufficiency of private savings. Fossati observed that this traditional idea might be valid in a context of full employment, but the Italian economic situation of the time was very distant from that ideal situation, and it required large-scale public initiatives backed with funds from the Marshall Plan. It was not a matter of being with Keynes or against Keynes, but rather of acknowledging that, *à la* Keynes, it is not possible to deal with economic stagnation by relying on market forces alone. Required instead was decisive action by the state in the field of public investments.

To summarize, Fossati's adherence to Keynesian theory developed linearly, and theoretically, it marked a shift from a static vision to a dynamic one hinging on the role of money in an advanced economy. The variations of economic magnitudes over time derive from uncertainty and from expectations, assuming the concrete form of a liquid money reserve. One of the clearest manifestations of this dynamic aspect is involuntary unemployment, excluded by the traditional theory, which can only be reduced with public investment to support private enterprise.

6. Conclusions

Fossati was a protagonist of the development of Italian economic thought in the central decades of the last century. He was at the beginning Paretian and tried to dynamize the general equilibrium following of Austrian approach. Later, he attempted to offer a scientific foundation to corporatist economics. The final landing was Keynesian theory, considered as a useful tool to address the problem of unemployment in Italy. This rich research showed two main elements. The first was his international openness. Foreign approaches were well known and discussed by Fossati and by Italian circles. This attitude is well testified in the direction of *Metroeconomica*. Secondly, albeit a mathematical economist, he was interested in the institutional and concrete aspects of economics. He participated in the small group of Italian economists who recognized the relevance, not only in analytical terms, of the Keynesian revolution. Although the Paretian equilibrium was a major conquest at the theoretical level, the economic reality facing the economist was nevertheless very far from these ideal conditions and had to be analyzed with instruments that were perhaps less sophisticated but more useful in explaining economic phenomena. This attitude can explain why the Italian economist did not offer any contribution to the axiomatics of general equilibrium. Fossati warned that in the name of a misunderstood formal rigor, economic analysis might become subordinate to mathematics, so that economics was reduced to some sort of applied mathematics with scant relevance to economic reality. Whereas the axiomatic approach to general equilibrium theory constituted, for Fossati, a deviation from the main road of economic research, the Paretians had a very different attitude towards empirical and statistical approaches then spreading

in Italy as well. In the 1950s, Fossati showed great interest in econometric research, which he sought to develop in Italy, by creating the first course of econometrics at the University of Genoa amongst other things.

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