The Marshallian System

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Editorial introduction

This essay by Giacomo Becattini is the translation of a chapter from his volume *Il concetto d'industria e la teoria del valore* (The concept of industry and the theory of value), originally published in Italian by the Turin scientific publisher Paolo Boringhieri in 1962. This was the first substantial work in economic theory by Becattini, then a young lecturer at the University of Florence: the subject can be described as a critique of economic methodology centered on the contradictions in the theory of value engendered by inadequate definitions of the constitutive categories of "industry" and "commodity". Characteristically, a work in economic theory in Italy at that time would start from a critical reconstruction of the roots of the problem in the history of economic thought. The present chapter should be read in that perspective rather than as a piece of HET in conformity with the current standards of the discipline. The book began with an examination of the Ricardian system and ended with an assessment of the imperfect/monopolistic competition literature. The two chapters devoted to Marshall and the controversies about his long-period partial equilibrium stirred up by Sraffa and Robbins occupied central place. The reconstruction of Marshall's theory contained in this chapter, although functional to the main argument of the book, stands on its own and constitutes an attempt at an overall interpretation that is still of some interest. This was the first time that Becattini came to terms with a character who would engage him in lifelong research along two tightly connected lines: on the one hand, historical reconstruction and interpretation of Marshallian and Victorian economics and social philosophy; on the other, extension of aspects of Marshall's industrial economics into a model of industrial districts to be applied to the study of post-war Italian economy. The text is also interesting as a sample of the character of economic studies in Italy at the time. In a memorandum that Becattini sent us for this edition he recalls that he first became acquainted with Marshall's thought during research carried out for his graduation thesis, which addressed the theory of full employment considered from a Marxian perspective. He came across Marshall again in a correspondence course in economics of the Istituto Antonio Gramsci, in which the two teachers, Antonio Pesenti and Luigi Occhionero, both economists affiliated to the Italian Communist Party, picked out Marshall from the fold of Neoclassical economists, who were all branded with the Marxian epithet 'vulgar economists'. In this stage of his professional life Becattini was in touch with economists Federico Caffè and Giulio Pietranera. Discussions on parts of the book also involved Sergio Steve and Paolo Sylos Labini. It was at the suggestion of Steve that Becattini sent a copy of the volume to Piero Sraffa. The latter's courteous letter of reply included a phrase – "The chapter on the Marshallian system seems to me to be particularly original and persuasive" – which, Becattini told us, heartened him in difficult moments of his academic career.
The text of the chapter is reproduced in its entirety without amendments or additions.

The Marshallian system

1. Alfred Marshall: his social philosophy and his scientific method

An attractive and widespread manner of approaching Marshall's system is to view it from the perspective of the mathematical reduction of the classical doctrines of Ricardo and Stuart Mill, a route Marshall confesses to have followed in that tender age when "he found it easier to think in mathematical symbols than in English". This approach offers several undeniable advantages, above all that of allowing Marshall's system to spring with the utmost naturalness from the work of his English precursors.[1] Marshall's mathematical background thus comes to play a decisive role in the evolution of economic thought, ensuring on the one hand that errors and one-sidedness are overcome and, on the other, acting as a guarantee of continuity of the debate on fundamental economic issues. It is on the basis of this type of approach to the Marshallian system – an approach that would perhaps not have entirely displeased Marshall himself – that many interpreters, including critics endowed with great critical finesse such as Sraffa, have accepted a characterisation of the problem of the relations between the classical theory and that of Marshall which tends to cloud the issue rather than clarifying it.

The most regrettable element of this interpretation lies in the overestimation of the purely logical-formal features of Marshallian theory, at the expense of its ideological concerns. Now, since it is our belief that the Marshallian theoretical system cannot be understood, in its most original aspects, if it is explored through a lens that fails to trace the logical model back to its ideological foundations, we have opted for a completely different route. We will endeavour, firstly, to delineate Marshall's social philosophy, contrasting it, where appropriate, with the classical and the pure economists' philosophies; we will then briefly consider his scientific method, likewise comparing it with that of other schools; finally, we will reconstruct his theory of value, insofar as it pertains to the matter at hand. In this context, we will address the problem of the concept of industry.

Rejection of a strictly mathematical approach to the Marshallian system does not rest

[1]. The best example of this kind of approach is found in the well-known essay by G.F. Shove, *The Place of Marshall's* Principles *in the Development of Economic Theory*, «Economic Journal», Vol. LII, Dec. 1942, pp. 294-329.

merely on the above-mentioned justifications. There is another reason for its eschewal. Certain statements by Marshall on his youthful infatuation with mathematics are, in our opinion, intended more to warn his readers of the dangers rather than to boast of the virtues of this aspect of his personal experience. There is no cause to doubt his words concerning his mathematical translations of Ricardo and Mill; yet we believe that the spirit of the Marshallian *oeuvre*, especially as it transpires from his correspondence, is not betrayed if emphasis is placed on the philosophical readings and meditations which always accompanied that "mathematical" phase of his intellectual development. His early years – he himself tells us so – were filled with study of the works of Hegel, Spencer and the socialists. If one adds to such readings his concern for the poverty of the working classes, his knowledge of German economic literature, his predilection – among mathematical economists – for the work of von Thunen, then it hardly seems arbitrary to assume that this complex of early reflections left a lasting mark on Marshall's spirit.[2] In any case, it was certainly rather more by virtue of these studies – we would venture to say – than through his mathematical training that Marshall was able to grasp with remarkable perspicuity the singular character of the classical doctrine. He gave a succinct verdict on the classical position regarding the question of labour: "[This bent of mind] led them to regard labour simply as a commodity".[3]

He also had notable insight into the array of problems associated with the alienation of wage labour.

But let us turn our eyes on that darker scene which the lot of unskilled labour presents. Let us look at those vast masses of men who, after long hours of hard and unintellectual toil, are wont to return to their narrow homes with bodies exhausted and with minds dull and sluggish. That men do habitually sustain hard corporeal work for eight, ten or twelve hours a day, is a fact so familiar to us that we scarcely realize the extent to which it governs the moral and mental history of the world; we scarcely realize how subtle, all-pervading and powerful may be the effect of the work of man's body in dwarfing the growth of the man […] The poor labourer may live and die without ever realizing what a joy there is in knowledge, or what delight in art.[4]

There is a kind of poverty that interferes even with religious happiness – a man who is worn out and has no leisure can hardly rise to it.[5]

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[2]. The most extensive and insightful account of this early phase of Marshall's life is found in the biographical essay by J.M. Keynes, reprinted in the *Memorials of Alfred Marshall*, ed. by A.C. Pigou, London, Macmillan & Co., 1925, from which many of the citations in this chapter are drawn. See also Marshall's letters, collected in the *Memorials*. A radically opposite opinion to the one presented here is that of Schumpeter. See *History of Economic Analysis*, New York, Oxford University Press, 1954, p. 780, n. 19.

[3]. *Memorials*, cit., p. 155.

[4]. *Ibid.*, pp. 105-106.

[5]. *Ibid*., p. 16.

Beyond the aspect of the dimming of the natural human faculties, Marshall was aware of their degradation. For a worker could "pass a tranquil and restful evening in a healthy and a happy home, and so may win some of the best happiness that is granted to man", but in actual fact he was unlikely – alas! – to have a decent comfortable home. And so the worker was more likely to spend his leisure time at the pub where, instead of engaging in uplifting conversation, he would be induced – by exhaustion and worry – to devote himself to coarse pleasures such as drinking and carousing.[6]

Admittedly, Marshall believed that this situation was characteristic only of the lowest classes of workers, mainly unskilled labourers, but he nevertheless uttered a stern warning based on the report issued by the 1866 Parliamentary Commission: "lads and maidens, not eight years old, toiled in the brickfields under monstrous loads from five o'clock in the morning till eight o'clock at night; their faces haggard, their limbs misshaped by their work, their bodies clothed with mud, and their minds saturated with filth".[7]

As late as 1873 he underlined the seriousness of this brutalization of mankind and, most significantly, of children, and acknowledged that the phenomenon of wages barely sufficient for mere physical preservation was rife.

Drawing a contrast between this historical situation of wide-ranging human "alienation" and his own concept of an ideal society, Marshall put forward the vision of a world centering on labour as the essential aim of life: "Work, in its best sense, the healthy energetic exercise of faculties – he wrote in 1873 – is the aim of life, it is life itself".[8] And in 1922, as death approached, he reiterated: "Work is not a punishment for fault: it is a necessity for the formation of character and, therefore, for progress".[9]

He appreciated the "*deep poetry*" implicit in the socialist schemes "according to which the work of every man is chosen by himself ",[10] and he foresaw "a condition in which men will work not less than they do now but more; only, to use a good old phrase, most of their work will be a work of love; it will be a work which, whether conducted for payment or not, will exercise and nurture their faculties".[11]

As the years went by, this ideal of a society, which in his early writings stood in stark contrast with reality,[12] underwent a gradual change, which may at least in part be ascribed to

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[6]. *Ibid.*, pp. 106-107.
[7]. *Ibid.*, p. 107.
[8]. *Ibid.*, p. 115.
[9]. *Ibid.*, p. 367.
[10]. *Ibid.*, p. 109.
[11]. *Ibid.*, p. 118.
[12]. But he was later to describe the lecture on *The Future of the Working Classes*, from which the above

a twofold evolution springing not only from the situation of Britain but also from the spirit of Alfred Marshall – so that it tended to merge with reality itself. The Marshall of the turn of the century already perceived some of the characters of his ideal model in the reality of Victorian England.

"Our present economic conditions are quite unlike any that have existed before". Many changes had come about, but

> the most important change of all – many of the leaders of the working classes have the knowledge, resource, self-control and dignity which are necessary for carrying through a broad and far-seeing policy. The best parallel that we can find to this state of things in earlier times, though it is very imperfect, is in those trading cities of mediaeval Europe where all were free.[13]

In this idealized reality Marshall discerned the gradual emergence of the main features of his utopias. Harsh, grinding, brutalizing labour, the labour which, in the flush of youthful enthusiasm, he would gladly have abolished, was now reduced to a secondary phenomenon, disappearing little by little, just as society was witnessing a "rapid lessening" in that part of the "English working classes, who have no ambition and no pride or delight in the growth of their faculties and activities, and spend on drink whatever surplus their wages afford over the bare necessaries of a squalid life".[14]

The opportunity for "*original and vigorous*" action by the individual worker or by workers organized into trade unions had greatly increased. Social mobility now operated much more efficiently: the enterprise system – mainly individual or family-run businesses[15] – was rooted in civil society, from which it continuously drew *homines novi*, rising up from the lower classes, who were accustomed to much harder and unremitting working conditions in comparison to the scions of the second or third generation of industrialists.

Moreover, capital flowed freely to all forms of undertaking worthy of being pursued, with almost complete indifference towards the social rank of whoever showed initiative.

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quotations are drawn, as having been due to the "ardent temperament of a young man"; elsewhere he clarified that these youthful enthusiastic ideas had resulted in his being advised to ... study economics! Cf. *Memorials*, p. 360.

[13]. *Ibid.*, p. 169.

[14]. *Principles of Economics*, variorum Edition, edited by C.W. Guillebaud, London, MacMillan & Co. for the Royal Economic Society, 1961, Vol. I, p. 90.

[15]. Family-run or individual businesses were still important in England in the early decades of the 20th century. "It has been suggested that methods of this sort, lying outside the organisation of the money market proper, are employed to direct more than half the total stream of new home investment", A.C. Pigou, *The Economics of Welfare*, 4th edition, London, Macmillan & Co, 1932, p. 89.

The ordinary workman if he shows ability generally becomes a foreman, from that he may rise to be a manager, and to be taken into partnership with his employer. Or having saved a little of his own he may start one of those small shops which still can hold their own in a working man's quarter, stock it chiefly on credit, and let his wife attend to it by day, while he gives his evenings to it. In these or in other ways he may increase his capital till he can start a small workshop, or factory. Once having made a good beginning he will find the banks eager to give him generous credit.[16]

Furthermore:

To say nothing of the credit that can be got in many businesses from those who supply the requisite raw material or stock in trade, the opportunities for direct borrowing are now so great that a moderate increase in the amount of capital required for a start in business is no very serious obstacle in the way of a person who has once got over the initial difficulty of earning a reputation for being likely to use it well.[17]

Indeed, – on closer inspection - even the very reasons behind investments no longer seemed as "sordid" as might at first appear to be the case: "business men are very much of the same nature as scientific men; they have the same 'instincts of the chase', and many of them have the same power of being stimulated to great and even feverish exertions by emulations that are not sordid or ignoble". Quite the opposite: indeed, Marshall deplored the fact that this part of their nature "has been [...] thrown into the shade by their desire to make money".[18]

Finally, income, being always above minimum living requirements, was no longer obligatorily channelled towards specific destinations as described in the works of the classical economists. Instead, it was distributed among various uses by the different subjects, not only with conscious awareness that every choice implied renouncing other potential uses, but also with an increasingly marked tendency to distribute income rationally over time.

The society which, in Marshall's estimation, was gradually taking shape in Victorian England was the embodiment - roughly speaking - of the social utopia of his early days. It was, he felt, a society which, give or take a few adjustments that basically concerned only minor details - such as complete abolition of brutalizing labour and education to the spirit of loyalty and mutual respect that substantiated the typical concept of "chivalry" – could attain the level of a "National Socialism [...] full of individuality and elasticity". "If we can educate this chivalry – Marshall added – the country will flourish under private enterprise".[19]

His was a vision of a market society that fully retained the elasticity and individual

[16]. *Principles of Economics*, p. 309.
[17]. *Ibid*., p. 308.
[18]. *Memorials*, p. 281.
[19]. *Ibid.*, p. 346.

freedom inherent in properly understood competition, i.e. competition cleansed of the degenerations that oppress man.[20] Herein lay "true Socialism, based on chivalry",[21] here was the ideal framework on which Alfred Marshall built up his theory of value!

Alfred Marshall's scientific method is just as complex and original as his philosophical interpretation of social reality. In the outline sketched in the following pages, for ease of presentation we will distinguish his method into two aspects: one negative or "passive", and one positive. It should be borne in mind, however, that as may occur with the very distinction between ideology and scientific methodology, at times this partition can impede an understanding of the fundamental unity of Marshall's thought.

The "passive" aspect is represented by his "concern" – constantly making itself felt in Marshall's writings – that he should refrain from entering into formal conflict with the abstract deductive method, the only one that would vouchsafe rigorous demonstrations. Marshall famously warned against long chains of deductive reasoning and never tired of making admonishments concerning excessive use of mathematics in economics, but there can be little doubt that throughout his life he made fairly intense "personal use" of mathematical deductive logic.

The criterion that seems to have guided him in this "defensive" aspect of his methodology would appear to have resided in the desire to exploit every possible "opening" in the mathematical model, in such a manner as to fit in those aspects of human activity that are not encompassed by the "static" theory, yet without ever entering into formal conflict with the deductive-abstract method. It is through coherent application of this methodological canon that Marshall's system – unlike, on the one hand, the system adopted by Walras or, on the other, that of Smith – presents not only a fairly compact logical structure but also, at the same time, the brightly patterned colour of reality and of life itself.

The most important consequence of this methodological canon is his well-known decision to forego general equilibrium analysis in favour of partial equilibrium analysis. To gain greater insight into this point, it is helpful to take a look at the analysis of demand in Marshallian theory.

The Marshallian theory of demand has not always been well understood. The mere fact that Marshall is commonly assimilated to the other marginalists of his day, for instance Jevons and Menger, is proof of this misunderstanding. For Marshall was not merely

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[20]. In 1881 Marshall wrote: "The work I have set before myself is this: - How to get rid of the evils of competition while retaining its advantages", *ibid*., p. 16.
[21]. *Ibid.*, p. 346.

polemically, but also substantially, in conflict with them. "The theory of consumption is not – he wrote – the scientific basis of economics",[22] and those who insist on the centrality of this theory – Marshall added – are acting as the advocates of a conception that "not only is inaccurate, but does mischief".[23] "Such a discussion of demand as is possible at this stage of our work, - he pointed out at the beginning of *Principles* – must be confined to an elementary analysis of an almost purely formal kind. The higher study of consumption must come after, and not before, the main body of economic analysis".[24]

In the light of this clear methodological indication, one can readily comprehend what caused the deformations suffered by the Marshallian theory of demand. Its reconstruction on the basis of the first chapters of the *Principles*, as is normally done, could not fail to result in over-estimation of the "purely formal" characters that Marshallian theory has in common with the general marginalist doctrine.

In contrast, the real position of the theory of demand in the Marshallian system can be grasped only by referring to Marshall's broad-based considerations on the relation between wants and activities. "While wants – he asserted – are the rulers of life among the lower animals, it is to changes in the forms of efforts and activities that we must turn when in search for the keynotes of the history of mankind".[25] And further: "although it is man's wants in the earliest stages of his development that give rise to his activities, yet afterwards each new step upwards is to be regarded as the development of new activities giving rise to new wants, rather than of new wants giving rise to new activities".[26]

It does not require much ingenuity to perceive the connections that link these observations concerning the relation between activities and wants to the above described social philosophy.

This philosophical framework should thus be taken as the lynchpin of the theory of demand in the Marshallian system. If wants were a rigorously independent term in economic discourse, as indeed in the approach of pure economics, then it would be possible for Marshall to regard wants satisfaction as the aim of economics and utility as a measure of value. But since he saw wants, and therefore demand, as intermediate phases, instrumental to a continuous process of production and integral reproduction (both material and spiritual) of human life, a general theoretical construction grounded on the concept that demand is

[22]. *Principles of Economics*, p. 90.
[23]. *Ibidem*, n.1.
[24]. *Ibidem*.
[25]. *Ibid*., p. 85.
[26]. *Ibid*., p. 89.

independent of supply was, in Marshall's view, not feasible.[27]

The interdependence between wants and activities – one of the mainstays of Marshallian thought – together with his keen awareness of the requirements of the abstract deductive method can thus be regarded as the ultimate cause of Marshall's decision to restrict his analysis to partial equilibria. If Marshall, who was very familiar with the system of Walras and Pareto - not to mention the ideas of Wicksteed -, opted never to develop his note XXI into an analogous system, this was due to his precise awareness of the impossibility of reconciling a philosophical interpretation (his own) that presupposes an interdependence between activities and wants with one (the puristic interpretation) that presupposes their independence from each other.[28]

The effects of this methodological concern were not restricted to the issue of partial analysis. In effect, the fact of considering one good at a time does not eliminate the interdependence between demand and supply, but merely reduces its effects. Therefore great care should be taken in defining the conditions of partial equilibrium analysis, in order to prevent the "residue of interdependence" from depriving the conclusions of any logical value.

If, for instance, partial equilibrium analysis is used for determination of the value of a commodity that constitutes a "considerable" portion of the universe of commodities, then it is a contradiction to adopt the *coeteris paribus* for different, alternative levels of price and quantity exchanged. Given the importance of that particular commodity in the overall system of commodities, for each price-quantity pair it is necessary to assume a different configuration of the prices and quantities of all the other commodities. In other words, we will be unable to build the couple of supply and demand curves or schedules that are necessary for value determination.

Accordingly, in order to assure "practical" independence between the supply and demand curves pertaining to a certain commodity it will be necessary to resort to one of the following two assumptions: a) that the commodity constitutes a "negligible" portion of the universe of commodities; b) that *the field of variation* of the supply and demand curves is limited to the *immediate surroundings* of the equilibrium point.

Examined separately, the two hypotheses appear to present a greater number of defects

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[27]. On the position of the theory of demand in the Marshallian system, see: T. Parsons, *Wants and Activities in Marshall*, «Quarterly Journal of Economics», vol. XLVI, pp.101-140, and also, by the same author, *Economics and Sociology: Marshall in Relation to the Thought of his Time*, «Quarterly Journal of Economics», vol. XLVI, pp. 316-347.

[28]. See the ideas put forward by F. Vito in *La concezione biologica dell'economia. Considerazioni sul sistema di Marshall,* Milano, Vita e Pensiero, 1934, pp. 57-78.

than advantages. With the first hypothesis it is possible to study a reasonably wide neighbourhood of an evanescent commodity, while the second makes it possible to explore no more than an evanescent neighbourhood of a reasonably widespread commodity.

Marshall, wisely, sought to combine the meagre virtues of the two hypotheses so as to legitimate the study of a circumscribed, although not infinitesimal, neighbourhood of the equilibrium point of a reasonably widespread commodity.

But not even by limiting the analysis of value to the study of a limited neighbourhood of the equilibrium point of a reasonably specific commodity is it possible to avoid all conflict with the most rigorous logic.

A theoretically perfect long period must give time enough to enable not only the factors of production of the commodity to be adjusted to the demand, but also the factors of production of those factors of production to be adjusted and so on; and this, when carried to its logical consequences, will be found to involve the supposition of a stationary state of industry, in which the requirements of a future age can be anticipated an indefinite time beforehand.[29]

Despite all his efforts, Marshall would fail precisely at the final obstacle: his claim that value analysis should be set at the long period level would make him relapse into that "stationary state" which – in his words – constitutes a genuine elusion of the theoretical problem of economics.

In actual fact, however, Marshall did not fall into this elementary trap. The limits to the duration of the long period derived directly from the social philosophy that he adopted as the premise of his theory of value. The reintegration of man in the context of the market has the effect of preventing the dynamic factors of changes in wants from being assimilated to "friction" and consequently neutralised. Beyond a certain temporal length, in some sense connected with the duration of human life, it is no longer possible to consider the preconditions of the problem of value as given: accordingly, the theoretically perfect long period never reaches its full term.

So far, we have focused only on the negative methodological concerns, but Marshallian methodology is not fully comprised in this attempt to combine logical coherence with empirical meaningfulness on the narrow tongue of land that divides the sea of error from that of truth. There is also a positive aspect, an attempt to forge a new methodology, devised specifically to solve the difficulties that arise from a problematization of social reality, based on the ideology that has been outlined in the earlier pages of this chapter.

[29]. *Principles of Economics*, p. 379, n.1.

It would be beyond the scope of this work to provide a comprehensive treatment of this aspect of Marshallian methodology; we will therefore restrict the field of study to those main features of the Marshallian endeavour that we have been able to extract from the limited investigation carried out here.

The sources of inspiration on which Marshall drew when putting forward his methodological proposals are to be found, in our view, in Hegelian dialectics and the ideas that were current in the second half of the last century in the sphere of philosophy and the science of nature. A Hegelian component undoubtedly seems to be present in Marshall's thought: in his conception of the flow of social change, in the theory itself of industrial equilibrium. But this Hegelian component is closely fused and intertwined with a whole series of philosophical musings deriving from the natural sciences. His explicit reference to biology as the source of methodological canons for economics is the most remarkable expression of this attitude. The concept of society as an organism and of competition as social turnover cannot be ignored: indeed, it constitutes the vital substrate of some of the most important parts of Marshall's theory.[30]

These generic sources of inspiration acted as the wellspring of Marshall's concept of an economic equilibrium distinct from the mechanistic model adopted by the majority of mathematical economists. Marshallian long-period equilibrium, i.e. the reference framework for his theory of value, is represented by a situation in which the constant inflow of "new" vital units counterbalances the equally continuous outflow of "old" ones, with each unit replicating exactly the same life cycle. This is the type of equilibrium that is accomplished in the human body and, in the most varied and indirect forms, in all the kingdoms of nature.

Considered independently of its naturalistic incarnations, this type of equilibrium harbours a few non-negligible peculiarities. It requires that: a) the flow of products stemming from the group of firms which, in the time unit considered, enter into the industry should perfectly offset the flow of products deriving from the group of firms that leave the industry; b) the structure of the industry (the proportion among the different types of firms) should remain constant. It does not imply that in a situation of equilibrium each firm should itself be in equilibrium.

It is unclear whether this concept of equilibrium can be given an adequate mathematical formalization. Peter Newman, for instance, argues that the technique of Markov transition

[30]. It hardly needs to be added that in Marshall's approach, dialectics loses some of its most marked attributes, such as the "qualitative leap".

matrices can fruitfully be applied in such a context.[31] But in our opinion, what is important to note is that any such device should not be seen merely as an expedient to solve the puzzle of increasing returns but rather as a vigorous and original attempt to build a new foundation for the process of abstraction that lies at the root of the theory of value.

In Marx, as is known, the fundamental abstractions of the theory of value are accomplished with the aid of the philosophical interpretation of "alienated" labour. Indifference towards the kind of labour, together with decomposability of production operations, are held to allow, in principle, the reduction of complex and concrete work to simple and abstract tasks. In an analytical perspective, Marxian labour can be said to be characterized by *perfect mobility and divisibility*. Therefore Marx is acting in a perfectly legitimate manner when – in a situation such as that construed in the premise of his argument – he disregards the specific characteristics of labour and treats the latter as a homogeneous resource to be distributed among the various utilizations.

A different type of abstraction characterizes the theory of perfect competition. Here the resources are conflated into a homogeneous fund of value by coherently and entirely reducing them to means of wants satisfaction. Ultimately, this interpretation does not consider each single resource in terms of its material entity, but only of the degree of its suitability to satisfy a want. Here, the "quantity of resources" is not a physical dimension, but the intensity of its capacity for utilization.

In line with this manner of thinking, only when all the concrete resources are devoted to the most useful utilization can one abstract away from the particularities of each single resource. In such a case, the price system of the concrete resources gives the coefficients for reducing concrete resources to abstract stocks of utility.

Analogously to the observations put forward above in connection with Marx, the analytical condition necessary to reach this limit state is *perfect mobility and divisibility* of resources. But since man himself, as a worker, must be included among such resources, his perfect divisibility and mobility imply the lack of any autonomous determination of his own will: he is fully and coherently reduced to the status of a commodity.[32]

The originality and methodological fertility of the Marshallian concept of equilibrium can be perceived precisely in relation to the problem of scientific abstraction. Whereas static

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[31]. Cf. P. Newman, *The Erosion of Marshall's Theory of Value*, «Quarterly Journal of Economics», vol. LXXIV, Nov. 1960, p. 593. We have been unable to locate the work whose imminent publication is announced by Newman in this work.

[32]. "Labour is a commodity; this is certain from the economic point of view", Cf. V. Pareto, *Corso di Economia politica,* Torino, Einaudi, 1942, vol. I, p. 23.

equilibrium is the situation in which each concrete unit of resources is positioned at the point where the forces driving its motion neutralize one another, dynamic equilibrium is the situation where the inflow equals the outflow of a certain "category of resources" in each particular "partitioning" of the system. This second type of equilibrium – to take a rather rudimentary example –by no means assume that, say, every farm worker is satisfied with his status: rather, it implies an equality between the number of those who abandon agricultural labour and those who enter into this sector. When this principle is expanded to apply to every possible partitioning of the system, what we have is a situation in which one can abstract away from the infinite multiplicity of concrete forms of labour, since the system of wage rates will provide the coefficients needed to reduce complex and concrete labour into labour which is simple and abstract. A similar argument can be put forward for the other reproducible productive resources.

There is one point in this construction that calls for comment. The validity and originality of the Marshallian theory are here made to depend on the possibility of identifying a partitioning of the system, a sub-aggregate, for which it is indeed possible to define an equilibrium of the type described above. That the originality of Marshall's approach depends on this possibility is immediately clear, because in the eventuality of the sub-aggregate collapsing to the lowest level, i.e. to the single concrete transaction, the ensuing position would - as will be seen in greater detail later – turn out to coincide with the position of the purists. That the validity of Marshall's approach likewise depends on such a possibility can be seen from the fact that at the level of the single transaction we would be beyond the boundary not only of Marshallian methodology but even of science itself.

It should therefore be stressed that the validity of the Marshallian construction relies on the afore-stated possibility of identifying an aggregate intermediate between the set of all the exchanges and the individual exchange – an industry! – which meets the requisites of a dynamic equilibrium of the type defined above.

It is here that one becomes aware of the way Marshall's social philosophy is profoundly intertwined with his analysis. If Marshall had set at the heart of his system a one-sided man, abstract and alienated, as did not only Ricardo and Marx but also the purists, then the idea of stopping the normalisation process prior to its final end-point – the most absolute stationariness – would have been meaningless. Wherever all empirical singularity, i.e. all "humanity", is quenched, wherever man is merely the sign of an "economic category", then the only level at which the theory can manifest itself is that of static general equilibrium.

Only at that point can theory be described as "explanation without residues", that is to say, unmitigated theory. At any other level of aggregation what one has is not imperfect theory, but simply "non theory". In a logical-formal framework, truth is not measured by degree: on the one side there is truth, on the other, error.

But in Marshall, as we have seen, man does not appear as an one-sided abstraction, Labour, for example, may not be perfectly divisible, nor perfectly mobile, because it is not purely a means to achieve other ends. "What is the aim of life, what is life itself, cannot well be interpreted as a cost which must be incurred in the attainment of ends outside itself".[33]

This impossibility of reducing labour to a pure means and, accordingly, its individual peculiarities to "friction" that the theorist should disregard is directly linked to Marshall's critical assessment of the classical theory:

> It led them to regard labour simply as a commodity without throwing themselves into the point of view of the workman; without allowing for his human passions, his instincts and habits, his sympathies and antipathies, his class jealousies and class adhesiveness, his want of knowledge and of the opportunities for free and vigorous action.[34]

The point is that when the worker's human feelings, his delight in creative work, his disaffection springing from the long hours of gruelling labour and the unhealthy environment, his likes and dislikes, are introduced into economic theory, the labour resource can no longer be assumed to be perfectly mobile and divisible. Here, imperfect mobility and imperfect divisibility are no longer forms of "friction" that delay the accomplishment of the economic laws: instead, they are "active forces" a scholar must take into account in structuring the very theory of value. Therefore, in Marshall's eyes, refusal to carry the analysis through to its extreme logical consequences – the single exchange or the stationary state – should be interpreted neither as a "cunning trick" nor as a lack of logical rigour, but as the outcome of a choice made at a more general level. Marshall aspired to elevate his theory into a guide for the conduct of man – man in flesh and blood – in the ordinary business of life. Having this end in mind, he found himself compelled to reject *homo œconomicus*, an abstraction from which there can be no "return" to practical action: instead, he had no option but to try to derive the human subject of his scientific discourse directly from a suitably standardized reality.

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[33]. T. Parsons, *Wants and activities,* cit. p. 121.
[34]. *Memorials*, p. 155.

To conclude this section, in Marshall the desire to position his analysis of value on a level intermediate between the overall system and the individual exchange was the direct result of the social philosophy he espoused. And, reciprocally, the possibility of defining a dynamic equilibrium for a sub-aggregate of the economic system gives a measure of the extent to which Marshallian social philosophy was adequate for the task of founding a theory of value.

The problem of the concept of industry now arises here for the first time, as a manifest condition of the logical coherence of the theory of value.

2. Alfred Marshall: the theory of value and the problem of the concept of industry

The features of Alfred Marshall's social philosophy and scientific methodology sketched in the first section can now be summoned to assist in reconstructing his theory of value. This reconstruction – it hardly needs adding – is not an end in its own right; rather, it seeks to highlight the configuration assumed by the problem of the concept of industry when it arises in a scientific system moulded by a more complex social philosophy than those philosophical systems which were proper to the classical economists and the "purists".

The "freedom and elasticity" that characterize the Marshallian world endow his theory of value with a first fundamental feature: economic subjects – whose reintegration into a market context is postulated – are treated in terms of the whole range of functional positions they can fulfil: buyer and seller, consumer and producer. This leads to a considerably more intricate array of problems than in any other scientific framework. For so great is the interaction of the forces coming into play that if Marshall had not availed himself of an ordering principle, such as the dichotomy of the forces of supply and demand, no scientific analysis would have been possible at all.

The grouping of economic forces according to whether their action *directly* affects demand or supply is not peculiar to Marshall. It can be found in many epigones of the classical economists, among whom – pre-eminently – Stuart Mill. But what distinguishes Marshall from Mill and from many other supporters of some form of the theory of supply and demand is his attempt to demonstrate that *at all levels of the analysis of normal values* the forces both of supply and demand are present and act simultaneously. That is to say, Marshall's position stands in contrast just as much to the degenerations of Ricardianism, which resulted in theories of the "value-cost of production", as it does to the extreme developments of purism,

which aimed to deny production decisions any autonomous influence in the determination of values.

A second feature of this theory of value is the periodization of the process leading to normalisation of product and factor prices. The Marshallian analysis of normal value is decomposed into a sequence of analyses of period equilibria, ordered logically according to the time required for the substitution principle to "normalise" the different types of factors. In short-period equilibrium, for example, the substitution principle applied by the entrepreneur succeeds in "normalising" the prices of the variable production factors only. At this level of analysis, the entire excess of gross returns over prime cost assumes the nature of rent or quasi-rent. Then as the analysis moves towards longer periods, the mass of quasi-rents "dissolves" into the incomes of the different production factors purchased by the entrepreneur. On the threshold of long-period equilibrium, the last in the series, all that is left for the residual mass of rents and quasi-rents to remunerate is just one productive effort, that of the capitalist-entrepreneur.

It is thus in the analysis of long-period equilibrium that a distinction is made between what *determines* value (cost-incomes) and what is, in contrast, *determined by* value (rents). In particular, it is at this level that the "normalisation" of the capitalist-entrepreneur's profit takes place.

The theory of long-period equilibrium – the logical pivot of the Marshallian system – blends together the different ideological and methodological requirements highlighted in the previous section. We will briefly outline the main aspects.

A first requirement is the necessity of maintaining a role for both demand and supply in the determination of the long period price or value. Such an aspiration is manifestly linked to the philosophical interpretation of man and society outlined earlier.

A second important requirement is the necessity of "explaining" profit. During the years of Marshall's scientific development, this problem - which Stuart Mill had bypassed and Marx had endeavoured to solve with his theory of surplus value - constituted the philosopher's stone of any general theory. Whoever cherished the ambition to build a scientific model necessarily had to tackle and solve the problem of profit. Mill's statement, according to which in the long run a conventional rate of profit becomes established, and upon achieving this rate the entrepreneur would rest contented – an argument that has surfaced again in the more recent literature – could in no way be regarded as an adequate answer to the problem.[35] For

[35]. On this point, see M.H. Dobb, *Political Economy and Capitalism: Some Essays in Economic Tradition*,

Marshall, who, by following the approach suggested by Ricardo and Mill, had established his reconstruction of the exchange mechanism on the "great central law",[36] it would have been unthinkable to leave the profit rate unexplained: this would have implied abandoning all claim to scientific authority.

Finally, a third requirement springs from the contrast between observed capitalist development, which exhibits phenomena of increasing productivity as well as concentration of capital, in opposition to the ideological presupposition of competition. In this regard, Marshall felt called upon to respond to the contradictions emphasized by Marx's analysis of accumulation and by Cournot's paradox of increasing returns, both of which agreed in asserting that the competitive system harbours a tendency to transform itself into its contrary.

The problem is now posed: the theory of the long-period normal value can be formulated only if one succeeds in constructing a pair of supply and demand curves capable of satisfying all the above noted requirements simultaneously.

If we begin to examine the demand curve, a non-negligible difficulty immediately comes to light. The collective demand curve derives its rationality entirely from the individual demand curves of which it is made up. The latter have to be defined with reference to a "commodity" that constitutes a genuine element in consumers' choices. And here a number of difficulties already mentioned earlier come to the fore again. In enquiring into the problem of value should we define the "commodity" meat by considering only beef, or should we maybe also include mutton? Marshall's answer is significant.

> The question where the lines of division between different commodities should be drawn must be settled by convenience of the particular discussion. For some purposes it may be best to regard Chinese and Indian teas, or even Souchong and Pekoe teas, as different commodities; and to have a separate demand schedule for each of them. While for other purposes it may be best to group together commodities as distinct as beef and mutton, or even as tea and coffee, and to have a single list to represent the demand for the two combined.[37]

The "philosophical" justification that Marshall provides of this methodological relativism

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London, Routledge, 1946, p. 10 and p. 137.

[36]. "This central truth – he wrote in 1876 - is that producers, each governed under the sway of free competition by calculations of his own interest, will endeavour so to regulate the amount of any commodity which is produced for a given market during a given period, that this amount shall be just capable on the average of finding purchasers during this period at a remunerative price: a remunerative price being defined to be a price which shall be just equal [...] to the sum of the expenses which must be incurred by a person who would purchase the performance of these efforts and sacrifices [which are required for the production of the commodity] when this particular amount is produced" (*Memorials*, p. 126-127). Reproducing this passage in *The Pure Theory of (Domestic) Values* (reprinted by the London School of Economics, London, 1930) he characterized this "truth" as "the great central law of economic science " (p. 3).

[37]. *Principles of Economics*, p. 100, n.1.

is based on the naturalistic metaphysics of continuity.

Another application of the Principle of Continuity is to the use of the terms. There has always been the temptation to classify economic goods in clearly defined groups, about which a number of short and sharp propositions could be made […] Great mischief seems to have been done by yielding to this temptation, and drawing broad artificial lines of division where Nature has made none.[38]

The truth is that this elasticity in determining the logical boundaries of the theory of demand was crucial for Marshall as a means of mitigating certain otherwise insurmountable contrasts between the logical requirements of supply and those of demand.[39] If he had fixed the boundaries of the theory of value, i.e. the breadth of the sub-aggregates mentioned above, rigidly according to the exclusive logical requirements of demand, then he would have had to *impose* the consumers' objects of choice on producers. With his "relativism", on the other hand, Marshall allowed himself the possibility of positioning his theory of value at both the level of the "general" market of a commodity and that of the "particular" market of a more or less specific variety of such a commodity. It is hardly necessary to add that Marshall was perfectly conscious of the price to be paid to formal logic as a result of relinquishing the criterion of perfect substitutability: "but in such a case [of grouping together distinct goods] some convention must be made as to the number of ounces of tea which are taken as equivalent to a pound of coffee".[40]

In comparing these objects of consumer choice with our "elementary wants", it can be noted that there is actually no fundamental difference between the two. Admittedly, Marshall always speaks of concrete commodities – and therefore fairly often refers to different wants at the same time – but the aggregative criterion he utilizes (substitutability) shows that in the last analysis, his "commodity" is composed by combining objects that have the characteristic of being the means for obtaining one and the same aim.[41] Regarding the "breadth" and "historical character" of the aims or wants it seems sufficient simply to recall the implications of the Marshallian relation between activities and wants.

If we now turn to the supply curve, many new difficulties become apparent. One of the first to attract attention is the problem extensively treated by Sraffa: if a supply curve

[38]. *Principles of Economics*, p. ix.
[39]. See, for example, the Marshallian attempts to introduce supply conditions into the definition of a "commodity". Cf. *Principles of Economics*, p. 105, n.1 and p. 391.
[40]. *Ibid.*, p. 100 n.1.
[41]. The predominance of substitutability over complementarity in the Marshallian theory of demand was noted, albeit with a different purpose in mind, by M. Friedman. Cf. *The Marshallian Demand Curve*, «Journal of Political Economy», Vol. LVII, Dec. 1949, p. 485.

pertaining to a complex of many specific commodities is adopted, we do indeed have the possibility of influencing the prices of factors (save in the exceptional case of an industry using the different factors in a proportion equal to the weighted mean of the proportions in which factors are utilized at the margin of every industry).[42] This brings about decreasing returns – and also the possibility of capturing many external-internal economies, thereby bringing about increasing returns - but the independence of demand from supply is thus severely compromised. If, on the other hand, the aim is to preserve this independence, then it becomes correlatively more difficult – albeit not completely impossible – to justify both increasing and decreasing returns. Between the Scylla of indetermination and the Charybdis of constant costs, Marshall took up an intermediate position, not well defined, but seemingly closer to expanded rather than restrictive definitions of industry. In the real long period the Marshallian supply curve would appear to refer to a fairly broad complex of firms, such as would include both actual and potential competitors.[43]

A second problem is related to the necessity of "explaining" profit. In order for the profit of firms that are already in business to constitute an adequate guide on how free savings should best be employed, the product that new firms are planning to manufacture should be perfectly equal, from the perspective of technology and demand, to the product supplied by the old firms. If there were any difference, the profit achieved by the old producers would not represent a valid indication for the new investment.

Here, the supply curve effectively refers to a product characterized, simultaneously, by perfect technological and demand homogeneity. Strictly speaking, Marshall would therefore be compelled to adopt the most restrictive of all restrictive definitions. He would have to base his analysis on the "homogeneous market" of a "homogeneous industry", or vice-versa.[44]

In actual fact, however, Marshall does not seem to have been willing to go that far in "explaining" profit. The "Marshallian" industry can be interpreted in various ways, but never in such a manner as to make it coincide with the production of a commodity that is perfectly fungible from the point of view of consumption and is obtained by identical production processes. It is, at best, a set of firms each of which is in a position to produce roughly the same products as all of the others, inasmuch as they are endowed with similar technical

[42]. Cf. R.F. Harrod, *Notes on Supply*, «Economic Journal», Vol. XL, June 1930, pp. 240-241.
[43]. On this point, see P.W.S. Andrews, *Industrial Analysis in Economics – With Special Reference to Marshallian Doctrine*, in T. Wilson and P.W.S. Andrews (eds), *Oxford Studies in the Price Mechanism*, Oxford 1951, pp. 143-145.
[44]. This delimitation of the logical boundaries of the theory of value is explicitly adopted by M. Gottlieb: "... our ultimate atom of analysis, a 'sub-group' made up of members of the same industry who belong in the same market group." See *Price and Value in Industrial Markets*, «Economic Journal», vol. LXIX, March 1959, p. 27.

equipment and experience and common technical expertise. Nothing can be said, in general, on the extent of the range of products of an industry, except that it is indeed ... a range. This range can be limited to different "varieties" of a commodity that serves a single purpose (e.g. toothpaste of various different compositions), but it may also include commodities that fulfil rather different purposes (e.g. women's shoes, men's shoes, children's shoes). By the same token, the "technique" used by the various firms may differ markedly: from bespoke production of individual articles to mass production, from gluing to hand sewing or mechanical sewing, etc.

Thus if it is in principle impossible to demarcate the span of "similar products",[45] one may well ask how actual profits can genuinely constitute a guide for new investment choices.

In our view, the answer that Marshall puts forward to this query is fairly elusive. It would appear that entrepreneurs are assumed to choose among industries which, fundamentally, constitute "existentially homogeneous sectors". These "sectors" are primarily delimited by a shared technology and, secondarily, by social conventions and custom.[46]

The question is: once a "unit of business ability supplied with capital" starts looking for a suitable "sector" in which to invest, what will it take into consideration? Will it use as its reference point the profits enjoyed by "some new producer just struggling into business, who works under many disadvantages, and has to be content for a time with little or no profits"?[47] Or will it use as its model a firm which "by exceptionally long-sustained ability and good fortune has got together a vast business, and huge well-ordered workshops that give it a superiority over almost all its rivals"?[48] If the issue is examined from the point of view of the single individual, one will certainly find persons who, having at their disposal an exceptionally large or exceptionally small availability of capital, or assessing their own abilities as rather high or rather low, will look at those extreme cases; but if - with Marshall - potential investors are considered as a collective body, it will be noted that the majority of their estimates of the rate of profit are concentrated in a fairly restricted range. In other words, for each "sector" the majority of the potential investors will endeavour to figure out the

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[45]. On the position of these similar products in Marshallian theory, see V. Angiolini, *Contributo allo studio di una categoria neoclassica*, Padova, Cedam, 1957, pp. 11-13.

[46]. As pointed out by G. Bruguier Pacini, in reference to Marshall: "an industry is conceived first and foremost as the *milieu* within which the existence of the individual enterprises unfolds and which constitutes their condition of life." Cf. *Intorno alla nozione di "industria". Per la storia di un termine economico*, in *Studi in memoria di Gino Borgatta*, Bologna, Arti grafiche, 1953, vol. I, p. 75.

[47]. *Principles of Economics*, p. 317.

[48]. *Ibidem.*

normal structure of costs and returns of a firm that has "had a fairly long life, and fair success, which is managed with normal ability, and which has normal access to the economies, external and internal, which belong to that aggregate volume of production; account being taken of the class of goods produced, the conditions of marketing them and the economic environment generally".[49]

The problem thus surfaces once more: with regard to this "representative" firm, whose rate of profit constitutes the reference point for the choice of the sector in which to invest the composite resource "business ability supplied with capital", *of what, exactly, is it representative*? It seems clear that as long as no univocal criterion delimiting the boundary of representativeness has been fixed, both the representative firm and its "normal profit" remain nebulous concepts, incapable - in particular - of solving the problem of "explaining" profit. For if the boundary of representativeness is not univocally fixed, it is impossible to provide a rigorously defined meaning either for the statement that resources flow to sectors where normal profit is highest, or for the assertion that there exists some established relation between expected and realized profits.

The only implication of this part of Marshallian theory, as far as the definition of industry is concerned, is that it must be neither so broad as to leave too much space to technological differences, nor so restricted as to preclude a regular turnover among the firms forming part of the industry.

The problem of increasing returns highlights further difficulties. The long period supply curve combines points each of which expresses an equilibrium "price-quantity" pair. That is to say, at each point the curve expresses the quantity of commodities which the industry would be willing to supply regularly against a given price, or, vice versa, the price at which the industry would be induced to supply a given quantity of commodities regularly.

The meaning of this definition of the supply curve is that at each of its points it must express a situation of perfect balance between the opposing tendencies to an increase and to a decrease in production. Now, such a situation can be identified both with the complete equilibrium envisioned by the theory of perfect competition and with the "statistical" or dynamic equilibrium contemplated by Marshall.

But if the situation is identified with complete equilibrium, then one is immediately faced with a dilemma: something has to be forsaken, either competition or increasing returns. The point is that no firm is in competitive equilibrium when the average cost of the quantity

[49]. *Ibidem.*

produced is not at its lowest level. Any other level of the average cost implies a tendency either towards expansion or towards reduction of production of the firm in question.

There are two possible routes whereby these contradictions - which, it should be recalled, spring from a mistaken interpretation of Marshallian equilibrium - can be overcome: a) use of Sraffa's external-internal economies in order to ensure that an industry's supply curve will be decreasing without compromising the perfectly competitive equilibrium of individual firms; and b) abandonment of the competitive framework and acceptance of an external limit to the expansion of the production of individual firms.

The first route, explored by Sraffa and Pigou, has no implications for the definition of industry. Pigou demonstrated that it is by no means necessary - as Sraffa asserted - to define industry extensively in order to capture many external economies, because the only condition needed to explain increasing returns is that the ratio between the rate of growth of external economies and that of production should is positive.[50] Seen from our perspective, this would be an excellent way out, but unfortunately it is all too true that these extremely convenient external-internal economies are – keeping to the static presuppositions of the argument - a purely hypothetical and unreal construction.[51]

In contrast, the second way out, which Marshall occasionally adopted, leads to a definition of industry which in the last instance ends up identifying an industry with the particular market of a given firm. The slope of the particular product demand curve thus satisfies all the requirements outlined here, except that of perfect competition.

The question of whether this exception can be reconciled with the true thought of Alfred Marshall has given rise in recent years to a lively and multifaceted debate. Many authors, reading Marshall through the lens of imperfect competition, have strongly maintained that Marshall is indeed a theorist of this market form,[52] and a number of the most renowned interpreters of Marshall[53] have subscribed to this view. However, on the basis of the

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[50]. Cf. A.C. Pigou, *The Law of Diminishing and Increasing Costs*, «Economic Journal», Vol. XXXVII, June 1927, pp.195-196.

[51]. Cf. P. Sraffa, *Relazioni fra Costo e Quantità Prodotta*, «Annali di Economia», vol. II, 1925, p. 307. In the second article – *The Laws of Return under Competitive Conditions*, «Economic Journal», Vol. XXXVI, Dec. 1926 - Sraffa becomes more cautious: "the economies which are external from the point of view of the individual firm, but internal for the industry as a whole, constitute precisely the class that is encountered most rarely" (p. 540). On this type of economies and on their potential for theoretical elaboration, see also J. Stigler, *Production and Distribution Theories,* New York, 1948, pp. 72-76.

[52]. Among the most strongly voiced positions in this regard, one can mention J. Steindl, *Small and Big Business*, Oxford, 1947, pp. 2-3; P.W.S. Andrews, *Industrial Analysis in Economics*, in *Oxford Studies in the Price Mechanism*, ed. By T. Wilson and P.S.W. Andrews, Oxford, at the Clarendon Press, §§ 2 and 3; J.N. Wolfe, *The Representative Firm*, «Economic Journal», Vol. LXIV, June 1954, pp. 341-343.

[53]. Cf. D.H. Robertson, *Economic Commentaries,* London, Staple Press, 1956, pp. 14-15 and

arguments put forward in the previous section of this chapter, it is not difficult to show that the entire question is misconceived.

The problem is not one of ascertaining whether in Marshall there exist any "tools" of the static theory of imperfect competition, because even if one were to succeed in the enterprise of detecting the "kinked demand curve", the "excess capacity", or the "equality between marginal revenue and marginal cost", it would still not follow that such tools signify "imperfections" in Marshallian competition. Rather, the real problem is that of determining how far it is possible to go along the path of the "fractioning" of industry without totally inhibiting the "functioning" of the substitution mechanism. The only answer of a general nature that can be given to this query is the following: the theory of imperfect competition is incompatible with Marshall not because it denies the perfection of competition, but because - and inasmuch as - it incorporates conditions such as would preclude the regular functioning of the mechanism of substitution.

Let us look more closely into this point.

On the demand side, the Marshallian theory is founded on the same principle as that on which the theories of perfect competition are based, namely the assumption of the lack of influence of individual demand on the price of the "commodity". The difference in the mechanism emerges when the supply side is taken into consideration: here Marshall rejects the expedient of the infinitesimality of the individual firm, in favour of a more realistic *Deus ex machina* of his own, namely the simultaneous presence and action of the forces of progress and of decay. Thus in order for the Marshallian value to be achieved, there is no need to align the suppliers along the path of cost reduction in the wake of fanciful assumptions of perfect competition. It will suffice that the ratio between the average economic size (equal to the value of the output) of the firm in each industry and the total dimension of the industry be such as to allow a *regular* turnover of firms. If we assume that in every industry the firm has a "typical" average age, then the ratio between average firm size and average size of the industry will be an inverse function of that average age. Therefore in industries with a protracted life cycle, regular substitution will be assured only by means of an elevated number of firms.

In a framework of this kind, monopolies do not constitute the metaphysical negation of

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21-23. And also C.W. Guillebaud, *Marshall's* Principles of Economics *in the Light of Contemporary Economic Thought*, «Economica», n.s., Vol. XIX, May 1952, pp. 117-118.
On the other hand, the literature is not devoid of warnings against excessively "liberal" interpretations of Marshall. Cf. J.H. Davies, *The Industry and the Representative Firm*, «Economic Journal», Vol. LXV, Dec. 1955, p. 710.

competition found in the theory of many of Marshall's contemporaries. Rather, a monopoly is, in a more natural fashion, a "sclerosis" of industry, a slowing down of that process of "substitution" which, in Marshall, replaces the mechanism of perfect competition. Strictly speaking, it cannot be said that a theory of monopoly value is present in Marshall's work, because once the "sclerosis" is complete, the forces of progress and decay no longer operate and value (which cannot be termed monopoly or competitive value) can no longer manifest itself.

If this interpretation of the Marshallian position concerning the problem of competition and monopoly is right, then, as argued above, the entire controversy on the presence of imperfections of competition in the Marshallian system becomes completely fruitless.

Having ruled out the two solutions, namely static equilibrium integrated by external-internal economies and the theory of imperfect competition,[54] attention will now focus on what in our view is the genuine Marshallian endeavour.

Our examination of the Marshallian method, put forward earlier, touched on the issue of "dynamic" or, as some authors call it, "statistical", equilibrium. Let us now take a closer look at its implementation in Marshall.

We noted that every point of the supply curve expresses the unit price a product should fetch on the market in order for an industry as a whole to supply a certain amount of it permanently. On the basis of our definition of "statistical" equilibrium, it can also be mentioned that there will be not only a given size, but also a given structure of the industry. That is to say, in order for an industry to engage in permanent supply of a certain quantity at a certain price, what will be required is that the tendencies to enter and to leave the industry, and likewise the tendencies to enter and to leave subgroups of firms (arranged according to costs) within the industry, should balance each other out perfectly. Equilibrium - it is worth repeating - will not express a situation of immobility, in which each individual firm has no interest to move because it has already reached its optimum point, but rather a situation of equilibrium of flows.

To explore the environs of the equilibrium point, let us suppose that a small increase in the demand price occurs – an increase that entrepreneurs consider to be durable. According to the interpretation of the supply curve we are proposing, the supply price that will become established after the long period adjustments will be greater, less or equal to the initial price,

[54]. D.H. Robertson admits that both Pigou's "brilliant piece of expertise" and also the solution of the "sloping demand curve" represent formalisations of two strands of thought present in Marshall. But he hastens to add, fully in line with his 1930 work, that he believed neither of the solutions were capable of "capturing" the spirit of the Marshallian method. Cf. D.H. Robertson, *Economic Commentaries*, cit., p. 23.

according to the form of the *temporal* cost curve that is characteristic of the industry in question. Let us clarify this point.

Every individual firm, Marshall argues, has its own life cycle that is linked to the natural circumstances of its founder and the immediate successors of the latter. Assuming that all the circumstances external to the firm remain unchanged, or almost unchanged, the founder's increasing commercial experience and physical vigour will suffice, in their own right, to explain an initially decreasing trend in the firm's average and marginal costs. One may thus be led to believe that whichever firm proceeds most rapidly in this tendency towards cost reduction will achieve an advantage over other firms such as to enable it to proceed even further along the path towards decreasing costs and/or increasing profits, eventually leading to a monopoly over the entire production. This conclusion would indeed be justified if Marshall had not, at this point, brought into play the above-mentioned forces of progress and decay.

A given firm can indeed, under exceptional circumstances, expand beyond the moment when the positive combination of the founder's experience and personal vigour has reached its maximum, but this will not represent the general case. The founder's offspring will not, as a rule, have the same dedication to “hard work and determination”. And the founder's grand-children, born into a well-off family and possibly raised by nannies, will almost certainly be inclined to relinquish the arduous task of managing the firm in favour of a good return on State bonds or some other source. The fundamental symmetry and the ineluctable action of the forces of progress and decay thus shape an arched trajectory which, akin to the life cycle of trees in the virgin forest, concludes with the disappearance or renewal (the entry of *homines novi* rising from the ranks of salaried employees can be likened to a renewal of the firm) of each business organism.[55]

The influence of these forces of progress and decay is subject to profound modifications due to the technological and institutional characteristics of the various industries. The productivity cycle (and, inversely, that of cost) will be notably different in an industry where the undertaker's personal ability and vigour play a major role as compared to one in which this aspect is, by virtue of the technical nature of the operations, almost negligible.

In the first of these two cases, the trajectory of productivity will presumably reach its maximum (i.e. the cost will have reached its minimum) considerably earlier than in the

[55]. On this point see F. Vito, cit.; D.C. Hague, *Alfred Marshall and the Competitive Firm*, «Economic Journal», Vol. LXVIII, Dec. 1958, pp. 686-690; and also E. Penrose, *Biological Analogies in the Theory of the Firm*, «American Economic Review», Vol. XLII, Dec. 1952, pp. 804-809.

second case. The curve may prove to be not only constant but even entirely increasing, when the institutional framework is characterized mainly by joint-stock companies. In the latter circumstance, the entire mechanism of substitution may be seriously impaired, if not indeed totally impeded.[56]

As far as concerns the specific problem we are dealing with here, it should be underlined that each industry has its own typical shape of the historical cost curve.

We already know that in an equilibrium situation it is not necessary for each firm to occupy a position at the lowest point of this cost curve. (This would be unthinkable, if one assumes that access to the industry is distributed over time). It should be added, however, that the industry as a whole cannot be in equilibrium if the forces driving towards the expansion of young and growing firms are not perfectly counterbalanced by forces slowing down the old declining firms. Thus if one were to arrange the firms of the industry in question according to their age, they would exhibit a traditional U-shaped cost curve. This interpretation would imply that the industrial equilibrium could be portrayed as *that age-based distribution of the firms of an industry that expresses through the collective cost curve the historical evolution of the costs of a "representative" firm of the industry in question*.

Now, if we imagine that the freedom of movement between one category and another of the firms forming part of the industry is substantially greater than the freedom of movement between potential new entrants and firms already operating - an assumption which can easily find a basis in Marshall's thought[57] - then we will have a situation whereby each increase in the demand price will be followed by a rise in the average age of the firms, and each decrease by an average rejuvenation.[58]

Drawing on this Marshallian intuition, a new interpretation of the schemes of increase and decrease in industrial returns suggests itself. In an industry where the increasing branch of the "standard" productivity curve has a steeper slope than the decreasing branch (which comes after the former) in the vicinity of the optimum age, then every mean aging of the population of firms will lead to a mean increase in productivity of the industry, because the productivity of firms whose age is lower than the optimum increases more sharply than does the decrease

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[56]. "And as with the growth of trees, so was it with the growth of businesses as a general rule before the great recent development of vast joint-stock companies, which often stagnate, but do not readily die. Now that rule is far from universal, but it still holds in many industries and trades." Cf. A. Marshall, *Principles of Economics*, cit., p. 316.

[57]. Invoking the "high authority" of MacGregor, Andrews states that "this view – that 'goodwill' limits the market available to the individual business at a given level of price – will, accordingly, be taken as fully Marshallian. Marshall did not state it in *Principles*, but it is certainly consistent with the general position into which he was forced when he recognized the fact of increasing returns in manufacturing", cit., p. 151.

[58]. See A. Marshall, *Principles of Economics*, cit., pp. 342-343.

in productivity affecting older firms. If, on the other hand, the slope of the increasing branch is not so steep as that of the decreasing branch, any increase in the demand price will bring about a mean decrease in the industry's productivity.

The "standard" productivity curve of the industry undergoes no change throughout the duration of this process, but by the time it comes to an end the representative firm is no longer embodied by the concrete firm that was indeed representative at the outset. Rather, it can now be seen as a firm that was too young in the previous situation, and which has now just reached the optimum age. However, in order for the current representative firm, as was already the case with the previous one, to be of an optimum age and, at the same time, capable of reproducing the industry's "normal" structure and level of production cost with its own production cost, it is imperative that the age structure of the industry should not undergo a significant change. If, conjecturally, the total quantity produced were to increase in such a manner as to move out of the "environs" of the initial equilibrium point, the structure of the industry (i.e., the proportion among the different classes of firms) would ultimately be so drastically modified as to reduce the degree of representativeness of any firm of optimum age.

Without going beyond the scope of this provisional discussion - which we hope to examine more conclusively elsewhere - it can be stated that an industry will enjoy increasing returns if, in the immediate surroundings of its maximum, its "standard" productivity curve grows faster than it decreases; it will have decreasing returns if it decreases faster than it grows; finally, it will have constant returns if it grows and decreases at the same speed.

This rapid profile calls for further and in-depth elaboration, but we cherish the hope that even in its present form it contains a few answers to that "violent effort of the imagination" which D.H. Robertson, in his controversial rejoinder to Sraffa, regarded as necessary for a proper grasp of the sense of the Marshallian construction.[59]

We may also note *en passant* that this interpretation could account for Marshall's otherwise somewhat strange concession to Ricardo, according to which the latter was probably justified in believing that the majority of industries operate in a regime of constant returns.[60]

Let us now attempt to bring together the various observations put forward in this chapter. Constructing a pair of (long-period) supply and demand curves implies numerous and potentially contrasting criteria for delimitation of the logical boundaries of the analysis of

[59]. Cf. D.H. Robertson, *The Trees of the Forest*, «Economic Journal», Vol. XL, March 1930, p. 87.
[60]. See A. Marshall, *Principles of Economics*, p. 814.

value. As far as the demand curve is concerned, the "commodity" in question should be given a restrictive and homogeneous (homogeneous with regard to use) definition. Instead, the supply curve calls for: a) a restrictive definition of industry, in order to avoid interdependency with the demand curve; b) a broad definition so that its variability can justify the direct intervention of demand in the discourse on value; c) a rigorously homogeneous definition (homogeneity in use and technology) in order to provide an explanation of profit.

The device of the "statistical" equilibrium of industry makes it possible to satisfy simultaneously a number of the above listed requirements. In particular, the requirement of variability of the supply curve can thereby be reconciled with the need for reasonable independence of the demand curve. What remains open is the problem of an "explanation" of profit.

An appropriate way of addressing this issue is by taking up again the previous mention of the process of "normalisation" of quasi-rents that forms part of Marshallian period analysis. Everything proceeds in a regular fashion up to the limit of long-period equilibrium. In effect, up to that point we observe a gradual dissolution of the fixed elements or, in other words, a normalisation of the prices of an increasing number of production factors. Only non-reproducible factors (such as land and legal constraints) remain excluded from this process, together with the factor "business ability in command of capital" which, inasmuch as it implements the "principle of substitution", is precisely the tool of that progressive normalisation.

But who will proceed to apportion the residue between the rent of non-reproducible factors and the profit of the "business ability in command of capital"? The problem of "explaining" profit, which is quite clearly the problem of the logical closure of the theory of value (and of distribution), is reduced here to its very essence: who economises the economisers?

Marshall's system, in our view, does not contain a genuine answer to this query, but only a pseudo-answer, a verbal metaphor: "in a somewhat similar way society substitutes one undertaker for another who is less efficient in proportion to his charges".[61]

This metaphor conveys the idea that the "selective", substitutive action of competition will have the effect of ensuring that every industry will be of a size such that its income - apart from exceptions - is in some sense proportionate to the satisfaction deriving therefrom. The "normal profit" of each industry will be precisely the price necessary to attract to it as many

[61]. *Ibid.*, p. 341.

units of “business ability” as are called for in order to turn out the mass of products demanded. The profit is thus “normalised”, the rent is identified and the demonstration of the “great central law” is accomplished. Thus in the last analysis the consumer’s logic appears as the supreme regulator of the competitive struggle. The “capitalist” analysis - pacified, as it were - thus becomes part of the economy of welfare.

But what is the logical flaw that has led us to resort to the phrase 'verbal metaphor' as a definition of that analytical argument which, no later than 1958, a renowned Marshallian like D.H. Robertson held to be logically impeccable?

Let us find it precisely in Robertson's detailed description.

After explaining how the entrepreneur applies the substitution principle to the other production factors, D.H. Robertson wonders: “Now can we extend this analysis to the fourth factor, business enterprise?” Clearly, if one considers the matter only from the point of view of individual firms, this is not possible:

> we cannot apply the law of diminishing return to such a lumpy unit as a whole business man; we cannot estimate his marginal productivity by subtracting what the business would produce without a head from what it actually does produce, for the former might well be zero. Nor can we easily picture him applying the principle of substitution to himself in the light of his own cost to himself.[62]

The road appears to have come to a dead end, the normal value of the fourth factor cannot be determined - Robertson states - as long as one looks at the question only from the point of view of the individual firm. But why should we maintain that point of view?

> If we take up the standpoint of the whole industry, the law of diminishing returns and the principle of substitution can after all be seen at work. Given the amount of other factors in an industry, there is a limit (varying greatly between different industries) in the number of independent business men under whom they can profitably be organised. In other words there comes a point after which each addition to the supply of business men would make a smaller and smaller addition to the total product of the industry [...] the cost to an industry of a business man of given efficiency is what he could earn elsewhere, just as in the case of labour or capital. If his marginal productivity falls below his cost, the forces of competition and industrial change will tend to push him out into other industries or into the ranks of hired management, that is of skilled labour of a particular kind. Thus these forces are applying the principle of substitution to him in the same sort of way that he is applying it to the other factors.[63]

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[62]. D.H. Robertson, *Lectures on Economic Principles*, London, Staple Press, 1957, vol. 1, p. 111.
[63]. *Ibid*., p. 112. See also vol. 2, p. 98.

We have quoted extensively from Robertson's work in order to highlight more clearly the point at which the above-mentioned logical leap occurs. This point is represented, in our view, by the transition from the firm's perspective to that of the industry. Robertson presents this transition as an innocuous and legitimate analytical transition. But let us look carefully into it.

First of all, one discovers that the so-called point of view of the firm is actually that of the entrepreneur. Now, seen in this light, all the factors "external" to the entrepreneur are for the latter only "containers" of capital. In long period equilibrium, i.e. in the theory of value, land, labour and "capital" are not "production" factors for the entrepreneur, but rather, "profit" factors.

That is to say, in long-period equilibrium the entrepreneur is facing nothing other than an undifferentiated factor, i.e. capital, which encompasses on an equal footing the functional characteristics of employees, means and tools of production and land.

How the Marshallian capitalist-entrepreneur apportions this "private" capital (the capital that acts as the generator of "profit") is something we already know. Since investment constitutes - in some sense - a crucial aspect of the life of a capitalist, the latter will distribute the composite resource "business ability in command of capital" *among* the industries that form "existentially homogeneous sectors".

The so-called point of view of the industry is, furthermore, the point of view of the collective community of consumers, in whose eyes the entrepreneurs, no differently from other productive resources, are merely the means for indirect satisfaction of wants.

The profound difference between this point of view and that described previously cannot escape the reader. The very same production resources which, considered from the first point of view, were "containers" of capital are now natural or technical conditions involved in the production of "goods". For the overall community, the process, which as far as individual entrepreneurs are concerned represents valorization of their capital, is simply a process of production of goods. In the consumer's mind the "accident" is precisely the fact that the process gives rise to the formation and accumulation of "private capital".

But this is not all. The terms among which these resources are distributed by the community of consumers (to the extent to which the existing social set-up allows them to exert any influence over the distribution of resources) do not refer to "existentially homogeneous sectors", which have little appeal for the consumers' conscience, but to their "elementary wants".

Accordingly, insofar as it is possible to postulate "elementary wants" and univocally determined "sectors", the Marshallian framework involves the co-existence of two opposed equilibrating tendencies: on the one hand stand the consumers, whose choices fuel a tendency towards a situation in which the returns on productive processes are equalized at the margin of their "elementary wants"; on the other, there stand the capitalists-entrepreneurs, who tend to redistribute themselves and thereby also the "processes of valorization of capital", which they manage in such a way that the returns are equalized at the margin of the "existentially homogeneous sectors".

The logical closure of Marshal's framework is thus seen to be conditional on the possibility of making existentially homogeneous sectors coincide, on a level of intermediate aggregation, with "elementary wants".

On the logical-formal plane this harmonisation is certainly impossible. To use an expressive example given by Mrs Robinson:

> there is only a tiny fringe of substitutability in demand between men's, women's and children's shoes, and it is reasonable to regard them as distinct commodities. The Boot and Shoe Industry (producing mainly with leather) is a fairly definite entity, supplying these three commodities. Some firms in the Industry specialise on commodities, but many produce all three. The three commodities are also supplied by the products of the Rubber Industry. A few firms straddle both Industries while supplying all three markets. On the other hand, each industry supplies commodities (leather goods and rubber goods) which are extremely remote from shoes in the chain of substitutes.[64]

Clearly, it is not a question here of going up or down on the scale of abstraction, because *on no level of abstraction will the two criteria (similarity and substitutability) divide up the economic universe in a corresponding manner.*

[64]. J. Robinson, *The Industry and the Market*, «Economic Journal», Vol. LXVI, June 1956, p.361.