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**LÉON WALRAS ON INDUSTRIAL REGULATION: RAILROADS AS ECONOMIC AND  
MORAL STATE MONOPOLIES**

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**ABSTRACT**

Modern microeconomics foundations of industrial regulation policies were developed during the second half of the 19th century. One of the main theoretical and applied debates which is still an issue today concerns natural monopolies. Railroads were at the center of these debates, because of their technological and industrial significance. The main question raised at this time was the participation of the State on the provision and regulation of this industry.

In France, between the 1840s and 1880s the evolution of regulatory legislation was deeply related with the academic contributions, in particular coming from liberal economists belonging to the *Société d'Économie Politique*. The dominant views among these French economists advocated for a Private provision and incentives to create competition within this industry and some defenses of a private-public partnership through concessions. Contrary to this point of view L. Walras was in favor of a purely public provision of railroads and transportation.

Walras's point of view was developed with twofold argument of theoretical and a moral nature. This paper analyses the logic and coherence of these arguments and concludes that they are constructed upon an original vision on human nature and economic dynamics that contrast with the traditional views on Walras's pure political economy. The case made in favor of the State intervention on Railroads industry considers altruistic motivations of human action, public servants surrounded by democratic institutions as free press and the role of education. On the economic side we found an interesting dynamic argument based on the importance of the network nature of railroads, the possibility for the State to improve the general economic development through the impetus given to railroads and the possibility to take advantage of the monopoly rents of some railways in order to finance new parts of the network. These ideas are mainly establish through a dynamic conception of the development of the railroads network and its consequences on economic growth.

**Keywords:** B13, B21, L92, L12

**JEL Codes:** L. Walras, Monopoly, Railroads, Economic Regulation.

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## Introduction

Léon Walras's *applied economics* has been traditionally considered as a derived product of his *pure economics*. It follows that his applied economic analysis is almost as abstract as his theoretical framework. Both works are often also considered to be naïf, far from empirical reality and even misleading regarding the historical facts of his time<sup>1</sup>. In particular, Walras's reform propositions are considered impossible to be implemented or at best incoherent regarding modern political-economy approaches. Even historians of economic thought who vindicate Walras's *applied* and *social* economics recognize the lack of clarity and his fuzzy definition of central concepts as "public goods", "natural monopolies" and "moral monopolies"<sup>2</sup>.

Modern microeconomics foundations of industrial regulation policies were developed during the second half of the 19th century. One of the main theoretical and applied debates, still open today, concerns the theoretical definition and regulation of natural monopolies. Railroads were at the center of these debates because of their technological and industrial relevance. The main question raised at this time was the participation of the State in the provision and regulation of this industry.

In France, between the 1840s and 1880s the evolution of regulatory legislation was deeply related with academic contributions, in particular coming from liberal economists belonging to the *Société d'Économie Politique*. The dominant views among these French economists advocated for a private provision and incentives to create competition within this industry and some defenses of a private-public partnership through concessions. Walras's views on railroads regulation are deeply influenced by these ideas and the debates around this influent group of thinkers. However, contrary to their point of view Walras was in favor of a purely public provision of railroads and transportation.

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<sup>1</sup> See for example Béraud's characterization of the common views on Walras's theory of state intervention « *L'analyse que Walras fait des rapports entre l'initiative privée et l'intervention de l'État occupe dans l'histoire de la pensée économique une place singulière. Elle a été mal reçue, sans doute en raison de ses faiblesses, mais aussi parce qu'elle avait été mal comprise. Les grands projets auxquels elle conduisait (...) sont apparus comme des utopies qui, loin de provoquer l'enthousiasme, n'ont suscité qu'une attention polie ou, pire, moqueuse.* » (2004, p. 25)

<sup>2</sup> For instance: Potier (1998, p. 391) finds Walras's theory of natural monopoly less clear than his contemporaries', as does Richard T. Ely.

Walras's opinion was developed through a twofold argument of theoretical and moral nature. This paper analyses the logic and coherence of these arguments and concludes that they are constructed upon an original vision of human nature and economic dynamics that contrast with the traditional views on Walras's pure political economy. This novel theoretical conception, for the time, was built upon common views shared with liberal and socialist thinkers. Widespread empirical evidence and opinions support Walras's diagnostic on the French railroads system. High prices, stagnation and inefficiency were a typical depiction of it.

The case made in favor of State intervention in this industry considers altruistic motivations of human action, public servants surrounded by democratic institutions as the free press and the role of education. On the economic side we find an interesting dynamic argument based on the importance of the network nature of railroads, the possibility for the State to improve the general economic development through the impetus given to railroads and the possibility to take advantage of the monopoly rents of some railways in order to finance new parts of the network. These ideas are mainly established through a dynamic conception of the development of the railroads network and its consequences on economic growth.

The central goal of this paper is thus opening a discussion on Walras's theory of railroads regulation as a construction within a larger political and intellectual debate during the second half of the nineteenth century in France, rather than coming back on the whether or not he developed a complete and coherent theory of natural monopoly<sup>3</sup>. I aim at proposing a more contextual reconstruction of Walras's arguments, showing how pragmatic arguments of his time were incorporated in his more complex and apparently pure theoretical scheme. Nonetheless, I also try to come back from contextual evidence to reconstruct the rationale of Walras's arguments that have often been presented as confusing or illogic

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<sup>3</sup> A rich and accurate discussion on Walras's contribution to the theory of Natural Monopoly is presented by M. Mosca (Mosca, 2008). She presents a view on Walras's theory enriched with technical arguments that differentiate his contribution from his contemporaries'. In particular, Mosca underlines an argument rather unnoticed before in the literature: Walras's theory of the Natural Monopoly is built upon a characterization of the technological specific characteristics of railroads distinguishing it from other forms of transportation. For a different point of view on these aspects, and a more critic evaluation of Walras's contribution on the theory of Natural Monopolies see Ekelund & Hébert (2003). Numa (2011) proposes a different point of view on the Walras's and Dupuit's theories of Natural Monopoly, mainly based on a conceptual discussion on the very definition of the concept built upon the analysis of their alternative views on the regulation of railroads.

reasoning. I argue that those rationales are less theoretical and more pragmatic than the common views on his contribution acknowledge.

The rest of this paper is structured as follows: in the second section I present the intellectual and political context explaining the sources of Walras's own ideas within a larger debate. The third section discusses the central concept of moral monopoly and the pricing and regulatory scheme Walras proposed. Finally a third section contains final remarks on epistemological considerations of the rupture between Walras, the French liberal economists and modern views on human action.

### **An economic and moral debate: an economic and moral answer**

During the second half of the nineteenth century France witnessed a heated debate about the regulation of its railroads system. The contribution of liberal economists and socialist thinkers were numerous and diverse<sup>4</sup>. Multiple successive reforms finally consolidated a system mostly operated and developed by the French State.

At the end of the 1970's the evolution of the influence of French liberal economists on the legislator was stopped. The pro-privatization bias of very prominent figures of the liberal movement was dominant among intellectual opinions by the 1840s and 1850s. The French state played initially a role of promotion and regulation of the system. Around the 1870s a gradual direct intervention of the State was perceived as a necessity in order to complete the enlargement of the network and to rescue private enterprises. The pinnacle of the nationalization process was the *Frecynet Plan* in 1879 that allowed the State to extend not only its incentives for the development of the network (credits, taxes reductions, etc...) but to go further in a *de facto* public ownership of the whole system. This was viewed as a defeat for the liberal economists.

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<sup>4</sup> For a detailed historical and intellectual background on these debates see (Numa, *The Infrastructure-Superstructure distinction in railroad industry and the regulation of natural monopolies*, 2009, pp. 3-5) and (Ekelund & Hébert, 2003, pp. 659-662).

## **1.2. The intellectual pitch : the Société d'Économie Politique and the Journal des Économistes.**

The majority of these French liberal economists were related to the *Société d'Économie Politique* and *Le Journal des Économistes*. The society and the journal had also an important influence on French policy makers during those decades. Jaffé and other walrasian scholars<sup>5</sup> have shown Léon Walras, during his young years before becoming a theoretical economist, collaborated with the Journal and participated in the activities of the *Société*.

Within this intellectual arena Walras appears to be not only closer to the socialists or, at least non-liberals, from a doctrinal stand but mostly in a place apart from his contemporaries regarding his theoretical position. The originality of his analysis makes no doubt. Nevertheless, the building blocks of his analytical construction, what he claims to be a novel scientific point of view, are to be found in the opinions of politicians or practical men. Furthermore, what appears today as Walras's more intricate (or even strange) arguments are taken from very "pragmatic" positions, common to these debates. Most of his arguments are a transfiguration of the *économistes'* description of the French railroad system even though it was usually presented against prominent socialist figures as Proudhon<sup>6</sup>.

However, as we will try to show in what follows, Walras's theory of natural monopolies is not a pure theoretical construction contrasting with a "practical" analysis of the liberals or other outstanding economists as Dupuit. Though, this is not the point of view of some historians of economic thought as Ekelund & Hébert:

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<sup>5</sup> In his essay on L. Walras, J. A. Schumpeter underlines the influence of the *Journal des Économistes* and the French liberal economists on Walras and in general on French academia, political and economic life in XIXth century France (Schumpeter, 1997). One very complete essay on the young intellectual life of L. Walras and his relationship with this group of liberal economists is presented in (Jaffé, 1984). More recently Jolink (Jolink, 1996), Cirillo (Cirillo, 1992) and de Paula (de Paula, 2002) have pointed out the importance of Walras's early writings; in particular those published in the *Journal des Économistes* for a correct understanding of his whole intellectual project.

<sup>6</sup> It is worth noticing the contrast between Walras's position and Proudhon's analysis of the railroad system. In an essay published as a special issue of the *Journal des économistes* in 1845 (Proudhon, 1845) he presents a very critic view on the importance of the railroads compared with fluvial transportation. His main argument is the relationship between railroads and the bourgeois industry in contrast with a more "popular" use of fluvial navigation. Walras was always in favor of the development of the railroad system because of its technological superiority.

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“... the liberals viewed nationalization (or its alternative, private ownership) as a matter of practice, whereas Walras viewed it as a matter of theory. For Walras, the core question of applied political economy, namely the organization of production, is a theoretical one.” (Ekelund & Hébert, 2003, p. 661)

Walras made the case for a complete nationalization and centralization of the whole network. He developed two central arguments justifying his position. The first one concerned the characterization of railroads as natural and moral monopolies. From what follows a normative argument of justice in favor of a public rather than a private ownership and exploitation of the industry. The second one, and mostly unnoticed in walrasian scholarship, is a pragmatic economic point of view. Put in a nutshell, it was a development plan for the expansion of this fundamental infrastructure industry, based on a price system with cross-subsidies. Walras also supported this proposal on an argument based on the lack of private incentives calling for a public logic instead of pure self-interest.

In his *Éléments d'Économie Politique Pure*, Walras (1988) includes as his last chapter (41th lesson), some considerations on Monopoly. Given the strict separation between Pure and Applied economics for Walras, this chapter may be considered as an intruder. In fact, we find the same subject as part of his *Études d'Économie Politique Appliquée* (Walras 1992). However, the main difference between those expositions on Monopoly lies in the fact that in the “pure economics” book, Walras develops what we could name a “pure theory” of Monopoly. This theory, as Walras himself recognized, is Cournot’s theory with a little contribution of Dupuit’s analysis. We can thus argue that Walras’s pure theoretical conception of Monopoly is a direct legacy of Cournot’s; as confirmed by Walras himself, he was influenced by Cournot. But this influence is only recognized on two matters: 1) Cournot’s methodological position as a champion of the mathematical economics school; 2) the pure theory of monopoly as presented in Cournot’s first book.

However, two warnings must be made. First, Walras remarks at the very beginning of his 41st lesson on Monopoly (in his *Elements of pure economics*) that one main assumption of his entire book has to be abandoned: “celle de la libre concurrence absolue en matière d’échange, de production et de capitalization. Ainsi, ce que nous connaissons, ce sont les effets de la libre concurrence. Mais quoi qu’en disent, ou qu’en paraissent



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dire, assez souvent les économistes, la libre concurrence n'est pas le seul mode possible d'organisation de l'industrie..." (Walras, 1988, p. 655).

In fact, following his methodological conception, Walras seems to talk about Monopoly as an "imperfection" of the market; as a "perturbation" of the perfect competition situation. This methodological conception, which has been inherited by the neo-walrasian Arrow-Debreu model, implies that a more realistic case must be understood and judged as a perturbation of a more general, but purely theoretical, situation: the perfect competitive general equilibrium. However, the reader of the 41st lesson is disappointed. Walras's exposition of the Monopoly theory is developed within a partial equilibrium framework. This is obvious because it is a direct legacy of Cournot's *Recherches* chapter V (Cournot, 2001 [1838]). However, the epistemological status of this pure theory of Monopoly is reversed in Walras's work. For Walras, this is an applied question, related thus to normative issues.

Since his early economic and political writings, L. Walras tried to establish a rigorous difference between scientific (or economic) and moral categories. This was a central issue within his whole intellectual system, inherited from his father Auguste. This was a primal condition when establishing a clear and rigorous criterion on public policy.

### **1.3. The normative judgment on Monopoly as matter of justice**

After having presented Cournot's theory of Monopoly in his "Pure Economics" book, Walras goes into an important policy issue: the question about the railroads management. Walras's posture on these matters is quite surprising: He advocates in favor of the necessity for the State to provide this service and against its privatization.

The main argument to justify this view on Monopoly is related with a fundamental building block of Walras's whole intellectual program: namely his conception of justice. Following this conception, the general competitive equilibrium situation is a normative benchmark because of its normative properties. Without going further on these questions (see Jaffé 1977), we can use a quotation from the mentioned chapter on Monopoly in Walras's "Applied Economics" book:

“Qu’il n’y ait, pour les services et pour les produits, qu’un seul prix sur le marché, celui auquel a lieu l’égalité de l’offre et de la demande, et que le prix de vente des produits soit égal à leur prix de revient en services, ces deux conditions n’en font qu’une seule et unique qui est que les services s’échangent les uns contre les autres suivant des proportions communes résultant des dispositions de tous leurs propriétaires; et cette condition est une condition de justice ...” (Walras, 1992, p. 186) [my emphasis]

This quotation sums up the role of competitive equilibrium as a norm of justice which constitutes a normative and a theoretical point of reference. A normative one because Walras always judges the “imperfect competition situations” as deviations from the “first best” situation of perfect competition. But also a theoretical reference, because in order to understand, from an analytical point of view, a particular organization of the market, the walrasian analysis describes it as a departure from this theoretical referent. It is thus also a methodology for pure economics and not only a normative analysis.

To grasp the implication of this methodological point of view for Walras’s conception of Monopoly and his political position in favor of the intervention of the State on the railroad industry, we have to explain how Walras judges Monopoly as a transgression of the two main features of the perfect competitive situation. This will allow us to understand how Walras’s normative analysis on Monopoly leads him to propose a modification on the theoretical conception of Cournot’s pure theory.

On the one hand, Monopoly is contrary to the equality between costs (i.e. *prix de revient*) and total income for the entrepreneur (i.e. *prix de vente*). The explanation of this is given by the strict application of Cournot’s pure theory of Monopoly: a monopolist can sell at a high price because of his market power. On the other hand, and here comes the theoretical departure from the cournotian framework, the monopolist is always capable of discriminating prices for each consumer. Here, Walras follows Dupuit’s theory against the assumption of a unique price postulated by Cournot. Walras gives us a quotation by Dupuit:

“Cette solution, dit Dupuit, repose sur ce principe général, c’est qu’il faut demander pour prix du service rendu non pas ce qu’il coûte à celui qui le rend, mais une somme ne rapport avec l’importance qu’y attaché celui à qui il est rendu.

Nous ne saurions, quant à nous, accepter sans restrictions ce soi-disant principe qui, énoncé d’une façon aussi absolue, serait destructive de toute justice.” (Walras 1992: 192)

Summing up, Walras has a normative position against the existence of private monopolies. This is supported on a theoretical conception of it that departs from the Cournotian pure theory following Dupuit’s theory of differentiation price policy of monopolists. Even if Cournot’s normative analysis on monopolies is built upon a general equilibrium framework, we showed that Walras takes the opposite way around: the theoretical framework within which he tackles the case of monopoly is the partial equilibrium analysis of a mixture of Cournot and Dupuit theories.

We now come to the core of a normative problem. It is because the railroad is a *natural* monopoly, that it cannot be given to the private capital to exploit it: because of an argument of justice. Thus, it belongs to the State, the community as a whole, to take control of the railroads to avoid the injustice of private monopolists.

« Autres exceptions à la règle de la libre concurrence. Une autre condition de la libre concurrence est que l’appréciation de l’utilité soit possible pour l’individu, ce qui n’est pas le cas, en général, pour les services publics. Donc il faut que l’État produise les services publics. (...) Une troisième enfin est que la multiplication indéfinie des entreprises soit possible, ce qui n’est pas le cas des monopoles naturels et nécessaires tels que les mines, carrières, eaux minérales, chemins de fer, etc., etc. Donc il faut que l’État organise les monopoles de façon à y ramener et y assurer l’égalité du prix de vente des produits à leur prix de revient en services telle qu’elle s’établit et se maintient d’elle-même dans les entreprises susceptibles de concurrence indéfinie. » (Walras, 1992, p. 427)

In fact, a private monopolist will charge a differentiated price scheme in order to extract the maximum willingness to pay from consumers. The state could charge differential prices, some of which could be over the cost of production (i.e. *prix de revient*)<sup>7</sup>, but only in order to cover investment and cross-subsidies for the development of new or less profitable, but strategic, lines.

#### 1.4. Moral monopoly and public goods

A good part of the scholars analyzing Walras's theory of monopolies and in particular of railroads present his notion of "moral monopoly" as a very fuzzy idea or at best as a misleading argument<sup>8</sup>. In spite of this, our point of view is that in order to understand the radical position Walras developed, it is necessary to understand the notion of "moral monopolies". Firstly, because it is at the center of the most original part of Walras's analysis; the notion of "natural monopoly" being less original and controversial. Secondly, because what appears nowadays as a blurry and archaic notion of "public goods", was in fact a very common view among socialist and liberal economists of his time.

Michel Chevalier's 1838 (for its second edition) entitled *Des intérêts matériels de la France : travaux publics, routes, canaux, chemins de fer* (Chevalier, 1838) and his entry "Chemins de fer" in the *Dictionnaire de l'Économie Politique* edited by Guillaume & Coquelin in 1853 (Coquelin & Guillaumin, 1853, pp. 337-362) were the main references for liberal thought on the regulation railways. The private provision, construction and development of the system was the ideal encouraged by Chevalier and the whole group of *Économistes*, as Walras used to call them. Nonetheless, those liberal thinkers shared with Walras a high opinion on the strategic role of the railroads system. This is an industry with a private interest for the firms involved, but it is also a *public utility* in a more literal sense than today's use of the word. For instance, Chevalier summarized his pride of railroads as follows:

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<sup>7</sup> We have showed in (Alvarez, 2010) that there is an important difference between Walras and Edgeworth – Marshall, concerning this particular point of view.

<sup>8</sup> See for example footnote number 12 in Ekelund & Hébert (2003, p. 663).

“... maintenant que tout le monde s’aperçoit que les points par lesquels la question des chemins de fer touche aux intérêts les plus vivaces de la politique, de l’administration et de la défense du territoire, de l’agriculture, du commerce et des manufactures sont en nombre indéfini, je dirais volontiers infini ... » (Chevalier, 1838, p. 208)

Coming back to Walras’s article on railroads, we should be less impressed and less challenged by his prose on the “moral” character of this industry. He is pleading in favor of a view on railroads not only from a private point of view but mainly from its public benefits. The private point of view meaning the private service provided by railroads on the transportation of commodities, businessmen and rich travelers. The public benefits being those “intérêts les plus vivaces” mentioned by Chevalier. Walras is more emphatic on this, and his point of view leads him to go further than the *économistes*, putting public or social benefits as more important than private interests:

« Il faut, en vérité, avoir sur les yeux le double bandeau de l’individualisme le plus étroit et de l’utilitarisme le plus borné pour ne pas voir que, indépendamment de la façon donnée aux produits par le transport, les voies de communication ont encore un autre objet qui est de constituer, de resserrer l’unité nationale; que, de même qu’une ville sans rues se réduirait à un amas d’habitations isolées les unes des autres, de même un pays sans voies de communication redeviendrait une agglomération de districts étrangers les uns aux autres; que, grâce aux voies de communication, la population se distribue entre les campagnes et les villes; que, par leur moyen, quelques-unes de ces villes deviennent des centres de mouvement scientifique, industriel, littéraire, artistique, d’où les idées, qui ne se paient point toujours dans les frais de production des marchandises, se répandent sur le pays tout entier; qu’ainsi ces voies sont des agents essentiels de la civilisation et du progrès en tous sens. » (Walras, 1992, p. 196)

### 1.5. The question of railroad rates and the cross-subsidies scheme

The excessive level of rates fixed by the private railroad companies was acknowledged even by the liberal economists. During the 5<sup>th</sup> June 1880 session of the *Société d'Économie Politique*, supporters and opponents<sup>9</sup> of the nationalization of railroad enterprises agreed on a negative diagnostic concerning the French railroads system: trip prices are too high and the network development is poor and inefficient. However, there was a deep disagreement on what remedy was the best to solve this situation.

The current interpretation regarding the notion of moral monopoly that Walras associates with railroads sustains this view is based on two elements: first, railroads are a natural monopoly and, therefore, it is undesirable, as regards justice, that its provision be private; and, second, railroads are public goods in as much as they serve indirectly, but importantly, the execution of public services like defense and security. However, this interpretation overlooks an major point: railroads contribute to the industrial development of the nation and it is possible that the public sector will provide this service better than the private sector.

Contrary to what Ekelund & Hébert (2003) advance, Walras's arguments in favor of the nationalization of railroads are also based on economic considerations regarding long term industrial policy. Even if they have an important normative component concerning commutative justice they include the possibility, associated with the development of railroads, of increasing industrial development. The private operation of railroads would not guarantee this possibility because private owners would not have the incentives to extend the railroad to underdeveloped zones of the country where most of the demand has a low capacity of payment. Also, private owners would not consider the natural monopoly aspects associated with railroads (national unity, transportation of artists, professors, etc.)<sup>10</sup>. The tariffs argument is interesting to understand that the solution to the public provision of monopolies cannot only be based on the equalization of marginal costs and price. The State might take advantage of the privileged position of these monopolies to obtain an adequate income and redistribute it, using monopoly rents.

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<sup>9</sup> Mr. Chérot was the leader of the pro-nationalization group in that debate.

<sup>10</sup> « La première consisterait à fixer les tarifs de façon que chaque ligne couvre ses frais en laissant à plus tard l'ouverture des lignes dont on prévoyait qu'elles ne pourraient pas couvrir leurs coûts. Le résultat serait d'offrir au public des transports bon marché tout en laissant le réseau se développer lentement. L'autre stratégie consiste à maintenir un tarif uniforme qui assurerait globalement l'équilibre des recettes et des coûts. Les lignes les plus fréquentées dégageraient un excédent qui permettrait de financer le déficit des autres lignes. Le transport serait plus coûteux mais le réseau se développerait plus rapidement. Walras était, bien sûr, favorable à cette seconde stratégie. » (Béraud, 2004, p. 22)

Even if these arguments seem novel, actually Walras builds them based upon the debates at the *Société* and other public places. In particular, Mr. Chériot defends the same type of tariff structure and the project of integrating the railroad network against most of the members of the *Société* during the same debate in which Chévalier presents his radical position against nationalization:

« Enfin, nous avons, mes amis et moi, dit M. Chérot, la conviction profonde que des économies considérables peuvent être réalisées dans l'exploitation des chemins de fer par une réorganisation nouvelle. La base de celle-ci serait d'appliquer, aux lignes de grands trafics et aux lignes à faible trafic, une exploitation spéciale à chacune, appropriée à la nature et à l'importance du trafic. Ces exploitations sont confondues à cette heure par le fait de la composition hétérogène et illogique des réseaux. La réforme que nous proposons consisterait à diviser, après le rachat, le réseau français en lignes principales ou de grand trafic et en lignes secondaires ou de faible trafic. » (Société d'Économie Politique, 1889, p. 99)

Walras adds an important element to this idea. The integration of the railroads in a single national system under such a tariff structure must comply with a principle of economic theory formulated in his pure political economy: the State must try to equalize the average price to the production cost (*prix de revient*). But this principle is not necessarily applied to each individual. The point here is that exceptions can be made when they promote the general interest (as is the case with patents) because the benefits from the discriminating monopoly or the tariffs above the production cost would not go to private individuals but would be destined to the promotion of the general interest. In particular, they would be used in developing the railroad network in order to provide adequately a public good which private enterprises would not finance freely.

## Public and private logic of action: a view on human behavior

Walras's highly optimistic opinion on the capacities of the transportation infrastructure to transform and develop an economy is not an original idea of his. It is neither a rhetoric concept far from a more pragmatic view of his contemporaries. It is a common view to consider railroads as a strategic industry. The difference between Walras and the *économistes* comes from a different element. While Chevalier and his friends would defend the capacity of the market and private incentives to fulfill those public services, Walras considers the private logic of action insufficient to create the conditions for it. The main disagreement being on the payment capacity and willingness to pay of the consumers of public benefits. Walras considers the limited payment capacity of the frontier provinces and less developed regions as an obstacle for the private provision of new lines or less profitable ones. But he also considers that the public benefits of railroads cannot be internalized by any private maximizing agent.

Concerning this last point, Walras argues against a social choice theory based on a hypothetical social utility function (Walras, 1992, p. 187) constructed summing up individual marginal utilities (*intensités d'utilités*). The logic of public action, as far as the provision of public goods is concerned, is not to maximize individuals' direct utility. Walras defines public goods as something above self-interested motivations. Public goods are those which « intéressent les hommes comme membres de la communauté ou de l'État procédant d'autorité à l'établissement des conditions sociales » (1992, p. 187).

It is thus in terms of a « general interest » that Walras considers a public good. But this does not mean this notion is contrary, at least partially, to the modern characterization of a public good. The non-rivalry and non-excludable conditions for public goods are related with the problem of payment enforcement of such goods. Walras arrives to a similar conclusion: he says that a public good has as its unique buyer and seller the State. Because there would be no individual incentives to supply or pay for it, even though “everyone must recognize” the social importance of those goods:

« Le besoin des services ou produits d'intérêt privé est senti par les individus; le besoin des services ou produits d'intérêt public n'est senti dans toute son étendue que par la communauté ou l'État. De



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même que les individus ne sentent pas toujours judicieusement leurs besoins, l'État non plus ne sent pas toujours judicieusement les siens, si les hommes qui le représentent ont été mal choisis » (op. cit.)

The last sentence of this quotation points out an interesting source of debate: whether the State is an efficient and honest administrator of public goods? Beginning with a common view on the public interest of railroads, Walras and the *économistes* depart on this matter. Walras will defend an anti-liberal point of view about the nature of private and public human action.

Mr. Garnier, a representative liberal economist, summarizes the position of the *économistes* against the State intervention proposed by Mr. Chérot, and followed by Walras:

« Quant à l'exploitation par l'État de ces vastes entreprises, il ne peut en être question l'État exploiterait forcément plus mal, plus chèrement et plus autoritairement que les compagnies actuelles. Le public, de son côté, serait exigeant sans raison et voudrait être transporté pour rien. Le coulage deviendrait bientôt considérable le fonctionnarisme se trouverait accru et les employés ne tarderaient pas à être des agents électoraux. L'exploitation par l'État, c'est le gâchis politique. » (Société d'Économie Politique, 1889, p. 117)

Facing this objection, Walras answers with a clearcut argument in favor of a democratic system and its capability to enforce the collective logic of the public servants. Even if it is worth to consider these agents acting as following their meager private interests, institutions in a well-developed democratic society can afford a permanent control of their acts. Furthermore, thinking of human action as merely motivated by private interests and profit maximization is too narrow a view. Walras, contrary to common views about him being the paradigmatic image of the

“neoclassical” thinker, identifies honor and other non-profit motivations as important as other motivations of human action:

« Là où l’esprit politique est formé, la presse libre et sérieuse, les fonctions publiques sont convenablement remplies, et des magistrats intègres, de braves officiers, des administrateurs éclairés et d’habiles ingénieurs font un besoin souvent très considérable pour une rémunération parfois modique. La considération et l’honneur sont, il faut le reconnaître, des mobiles d’activité naturels à l’homme aussi bien que le désir de gagner beaucoup d’argent. L’État a son rôle comme l’individu a le sien, et il faut avoir confiance en l’État dans la limite de ses attributions comme en l’individu dans la limite de siennes. » (Walras, 1992, p. 212)

There are then more intricate arguments in-between economics and politics against the liberal stand. Walras defends a public provision of goods, even of private utility, arguing that beyond purely private individual interests, individuals can also act motivated by a collective interest and that democratic controls can contribute to keep a level of social commitment amongst civil servants that guarantees the adequate provision of such goods. This form of control cannot be used over private firms and, therefore, nothing could actually guarantee that they guarantee an adequate provision of such services and public goods.

### **Concluding Remarks**

Exploring the case of railroads allows us to see some less noticed aspects of Walras’s thought. Besides his work as an economic theorist Walras shows a keen interest in the practical issues of his times. He approaches these issues using his theoretical framework which allows him to identify the appropriate spaces for government intervention; those where perfect competition doesn’t hold. The action of the State is justified not only in the presence of market failures but also because it is the only way to address justice issues, which lay beyond the scope of pure theory.

This exploration also shows how Walras believes there is no single recipe for dealing with different market structures. Monopolies should be regulated differently depending on the goods and services they provide.

Finally, Walras believes that problems of political economy cannot be reduced to compatibility of incentives or mechanism design: we must consider other motivations of human action and the political institutions in order to have a complete picture and optimal solutions.

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