

management” (1981: 470). It’s well known that J. Dupuit was a very strong supporter of free markets; nevertheless he was convinced that, as the transport network is a monopoly, the private monopolist could abuse of his position; for this reason Dupuit was in favour of public intervention: “L’exploitation par l’Etat d’une industrie quelconque – he writes – est un fait exceptionnel qui doit toujours être justifié par des circonstances exceptionnelles. Or ici [transport network, water distribution, lighting, heating] la circonstance est le monopole” (1852-53 : 852)⁴¹. The same opinion was expressed by Walras (1875), who wanted the Government to intervene in the railways, either by directly controlling, or by regulating them⁴². The importance of nationalization for the railways is strongly expressed by Ely (1886 and 1889)⁴³, while Hadley finds the necessity for Government regulation in the very difficult aim of controlling “the abuses of monopolies without destroying the industries” (1886: 28), and H.C. Adams (1887) sees social harmony restored by extending the duties of the State in the “industries of increasing returns”⁴⁴. It is to these American writers that Marshall refers when he says: “arguments are now used, especially in America (as for instance by Mr H. C. Adams), in support of the active participation of the State in industries which conform to the law of increasing return” (1890a: V.XIII. fn.129). On the contrary, Marshall suggests that “such undertakings, though always under public control, and sometimes even in public ownership, should whenever possible be worked and managed by private corporations” ([1890b] 1964: 106). The proposal of De Viti de Marco (1890) is very interesting: he writes that the Government can regulate entry in a natural monopoly through a system of competitive bidding; it can award a franchise to the most efficient firm and can refuse to renew it if the firm behaves as a monopolist. As is well known the same proposal was made by Chadwick in 1859, and by Demsetz in 1968⁴⁵.

7. An overview

Expression	Concrete situations	Scale economies	Incompatibility	Diagram	Government intervention

⁴¹ There are many other occasions, like the monthly meetings of the Société d’économie politique between 1853 and 1864, in which Dupuit expressed his opinion in favor of public management of natural monopolies. See Mosca (1998: 265).

⁴² For a different analysis of Dupuit and Walras on railroads see Ekelund and Hébert (2003).

⁴³ See the criticisms of Ely’s belief in government superiority for the regulation of natural monopolies by O’Driscoll, who thinks that: “he was in error in almost all his contentions” (1982: 197-199).

⁴⁴ On Adams’ opinion of regulation see Sharkey (1982: 15-16).

⁴⁵ For the proto-history of franchise bidding see the very interesting article by Ekelund and Hébert (1981).

		<i>Smith 1776</i> Division of labour			
<i>Malthus 1815</i> Old sense					
		<i>Senior 1836</i> Scale economies	<i>Senior 1836</i> Only a relation		
		<i>Cournot 1838</i> Marginal cost function	<i>Cournot 1838</i> Based on mathematics		
<i>J.S. Mill 1848</i> New sense	<i>J.S. Mill 1848</i> Postal service Water and gas	<i>J.S. Mill 1848</i> Large-scale = saving in costs	<i>J.S. Mill 1848</i> Waste due to competition		<i>J.S. Mill 1848</i> Provision at municipal level
	<i>Dupuit 1852-53</i> Transport networks				<i>Dupuit 1852-53</i> Public management
<i>Walras 1875</i> More precision	<i>Walras 1875</i> Public utilities	<i>Walras 1875</i> Initial set-up costs	<i>Walras 1875</i> Duplication		<i>Walras 1875</i> Public direct control or regulation
<i>Ely 1880s</i> Consolidation					<i>Ely 1886</i> Nationalization
			<i>Hadley 1886</i> Process of adjustment		<i>Hadley 1886</i> Regulation
		<i>Adams 1887</i> Three classes of returns to scale			<i>Adams 1887</i> State duty
		<i>Pantaleoni 1889</i> Variations in costs			
	<i>De Viti de Marco 1890</i> Telephone	<i>De Viti de Marco 1890</i> Cost features of natural monopoly	<i>De Viti de Marco 1890</i> Network effects		<i>De Viti de Marco 1890</i> Franchise bidding
<i>Marshall 1890</i> Indivisible industries		<i>Marshall 1890</i> Internal economies	<i>Marshall 1890</i> Criticisms to Cournot		<i>Marshall 1890</i> Managed by private corporations
		<i>Barone 1908</i> Shape of the average cost curve	<i>Barone 1908</i> Description with consideration of market demand	<i>Barone 1908</i> Verbal description	
		<i>Edgeworth 1913</i> Average and marginal cost functions with diagram		<i>Edgeworth 1913</i>	
			<i>Knight, Sraffa 1920s</i> Cost Controversy Definitive statement		
		<i>Harrod 1930</i> <i>Viner 1931</i> Definitive refinements			