

DISEI - Università degli Studi di Firenze

Working Papers - Economics

The Modern Theory of Regulation
as an Inheritance of
De Viti de Marco's Cooperative State

Alessandro Petretto

Working Paper N. 21/2014

DISEI, Università degli Studi di Firenze
Via delle Pandette 9, 50127 Firenze, Italia
www.disei.unifi.it

The findings, interpretations, and conclusions expressed in the working paper series are those of the authors alone. They do not represent the view of Dipartimento di Scienze per l'Economia e l'Impresa, Università degli Studi di Firenze

The modern theory of regulation as an inheritance of De Viti de Marco's Cooperative State

*Alessandro Petretto**

ABSTRACT

The aim of this article is to analyse the relationship between the thinking of a major public finance scholar in the Italian tradition, Antonio De Viti de Marco, and the foundations of the 'new' economic policy which, at the end of last century in most industrialised countries, generated a profound reorganization of markets, particularly those of Public Utilities (PU). Thus, we link the Monopolistic State (MS) and the Cooperative State (CS) configurations defined by De Viti with the views of state suggested by modern Political Economy theory. We argue that a *pro-competitive PU regulation* can be interpreted as a process of moving away from the main features of the MS to those of the CS. Finally, by following some of De Viti de Marco's precise intuitions, we analyse the topic of enterprise ownership. In this exercise of economic analysis *in retrospect* we will not be looking at De Viti as a precursor, but we wish rather to emphasize the actuality of his main methodological approach to public finance.

Keywords: De Viti de Marco, Cooperative State, regulation, privatization

JEL Classification: B31, D72, L51

1. Introduction

Research into the origins of some tendencies in modern economic theories in the thoughts of ancient authors often raises perplexities from the point of view of historical coherence. Indeed, any economic analysis *in retrospect* is likely to build improper links without an adequate historical perspective and is often moved on only by the feverish research of precursors of propositions now *à la page*. However, while the history of economic thought may not benefit much from this methodological procedure, we

* Dipartimento di Scienze dell'economia e dell'impresa (DISEI), Via delle Pandette n.9, Polo di Scienze Sociali, Università di Firenze, alessandro.petretto@unifi.it. I'd like to thank Manuela Mosca for reading and commenting on this work, since its very first version, presented at the Conference on 'L'attualità del pensiero di Antonio De Viti de Marco', Centro Congressi Ecotekne, Università di LECCE, 8-9 November 2002, and never published. This is a completely new paper which I hope reflects her useful comments and suggestions.

think that economic theory *strictu sensu* can instead benefit a great deal. The finding that some ideas persist over time, throughout the development of analytical techniques and the evolution of economic facts, reinforces and legitimates them as ‘strong’ interpretations of modern society.

Italian public economists are used to referring to the contribution of Antonio De Viti de Marco¹ to support the propositions of some modern approaches to the theory of public intervention in the economy². It is a common opinion that one of this eminent economist’s greatest contributions to public finance theory is the formalization of two types of state view: the *Monopolistic or absolute state* (MS) and the *Cooperative or democratic state* (CS). Sergio Steve, one of the founding fathers of Italian public finance in the post second world war era, named these ‘the two extreme examples of the people’s exclusion from or participation in the financial choices of the state’ (Steve, 1995). Therefore, they appear to be two fundamental benchmarks upon which to construct the theory of public intervention in the economy.

In particular, we may say that the true heir to this thinking is the theory of ‘*Political Economy*’, which aims to endogenize governmental economic policy choices, by modelling plausible behavioural rules for the various institutional actors such as voters, politicians, public officials, public enterprises managers and unions (Persson and Tabellini, 2000, Besley 2007). On the other hand, *Political Economy* has long traditions, going back to *Public Choice* of the sixties, and to the *Public Finance Italian Tradition*, developed two centuries ago, of which De Viti de Marco was a well-known scholar (Buchanan 1960, Fausto 2003).

In the light of this tradition of thought, this paper analyses the foundations of the ‘new’ public intervention which, at the end of last century, determined, in most industrialised countries, a thorough reorganization of markets, particularly those of *Public Utilities* (PU)³. Thus, in the next section we link the Devitian MS and CS configurations with the views of state suggested by modern Political Economy theory. In the third section, we connect the benefits of competition to the policies aimed at evolving the institutional setting from MS to CS. Then, in the

¹Born in 1858 in Lecce and deceased in 1953 in Rome. The main De Viti contributions to this topic are in *Il carattere teorico dell’economia finanziaria*, 1988, 1893 and then in *Principi di economia finanziaria*, 1928,1934.

² Contemporary authors were also aware of this. Famous is Einaudi’s phrase in the preface of the 1953 edition of the *Principi di economia finanziaria* by De Viti (quoted in Italian, to maintain the efficacy of the expression) ‘...Non sempre, quando si tormentano intorno ad un problema finanziario, viene fatto agli studiosi di cercare altri libri; ma quasi sempre ad essi viene ovvio di chiedersi: che cosa ne pensa De Viti?’.

³ See for instance Crew and Kleinderfer (2002) and the essays in Crew and Parker (2006).

fourth section, we survey the PU regulation models according to this perspective. In the fifth section we design a specific formalization of the CS solution to the regulation game. In the sixth section, following some precise hints by De Viti de Marco, we analyse the topic of PU enterprise ownership choice. The seventh section concludes with some final comments, underlining that, in this exercise of economic analysis *in retrospect*, we are not looking at De Viti as a precursor, but at the actuality of his main methodological approaches to public finance.

2. Cooperative State and modern Political Economy theory

In De Viti's *Monopolistic State* (MS), the ruling dominant class tends to fully exploit economic agents in order to dominate the governed classes, while in the *Cooperative State* (CS):

‘[...] *free competition among social groups creates conditions similar to the features of a cooperative enterprise, where there is a perfect unity of purpose between producers and consumers*’ (*Principi*, p. 40-41) and ‘[...] *the relationship between state and citizens is one of exchange*’ (*Principi*, p.49)⁴.

According to the political scientists who interpret De Viti, the Cooperative State assumes typical democratic fundamentals, as it requires that an increasing influence of governmental institutions is placed under the citizens' control. This allows everyone to make the best decisions for his or her private interests, while public interest becomes the general political objective to be pursued (Cardini, 1985, p.20).

In order to analyse the CS configuration with modern economic categories we may refer to the game-theoretic notion of ‘cooperative game’, in which players can reach credible and binding agreements on the decisions to be made. Therefore, the basis of cooperation is the absence of strategic behaviours, as in the logic of the Devitian democratic state that achieves ‘a perfect unity of purpose between producers and consumers’. Now this outcome is obtained by restraining the market power of the different agents, such as producers, bureaucrats, public officials and politicians, and then, as we'll see in the next section, by developing

⁴ As is well-known, the textbook *Principi di economia finanziaria* had a long gestation with several subsequent editions. The last and final one is considered to be the edition of 1953 published by Einaudi, with the quoted preface by Luigi Einaudi. This edition was then reprinted by Boringhieri in 1961, and is the one to which we refer here.

competition in the general form of *contestability*. Thus it is not reckless to affirm that the efficiency levels reached by contestable markets are analogous to those reached by the SC configuration theorized by De Viti.

Moving on to modern political economy theory, we find that there are several ways of thinking of the state. For instance, Daron Acemoglu, in his monumental lecture notes (Acemoglu 2013), distinguishes the following views. The *state as a non-actor*, common in many public finance textbooks, which does not have its own objectives, nor does it represent the interests of some groups in society, and is called to intervene when there are market failures. The Marxian *state as the agent of a social group* such as landowners, capitalists or some sort of elite, which uses its monopoly in order to further the interests of this group. The traditional *public choice* view of the *state as the grabbing hand*, controlled by bureaucracy or the politicians who use their power to look after their own interests (Brennan and Buchanan 1980). It is clear that the two latter configurations are related to De Viti's Monopolistic State.

Finally, Acemoglu considers the view of the *state as a nexus of cooperation*, which 'recognizes the presence of opportunistic behaviour on the part of the agents, but does not emphasize conflict between groups of agents' (Acemoglu, 2013, p. 16). This state, by means of its coercive powers, encourages cooperation between agents, and, as in the Hobbesian conception of Leviathan, serves the interest of all the citizens by boosting well-ordered compartments. This view is close to the so-called 'populist' political philosophy originating from Rousseau, according to which the state is a reflection of the people's 'general will' to obey a law prescribed for us. And when all obey the general will, welfare in this society is better. Clearly this view is very close to that of the Devitian CS. Note that this view does not require efficient institutions, since the potential for institutional failure is always present; nevertheless it contemplates '.....institutions as evolving in order to solve some potential market failure in society' (Acemoglu, 2013, p.16).

We may formalize this concept by referring to a political version of the Coase Theorem (PCT), proposed by Acemoglu himself (Acemoglu 2003). Let us define the GDP (or some other measure of welfare), Y , of a society, as a function of a vector of characteristics, X , and a vector of institutions and policies, IP : $Y=F(X,IP)$. Hence, the set of efficient institutions and policies $E(X)$ are defined as follows:

$$IP^*(X) \in \arg \max_{IP} F(X, IP) \equiv E(X). \quad (1)$$

According to the PCT, independently of the initial position, there are evolutions that can at least approximate some $IP^*(X)$ in $E(X)$, and the institutional evolutions we consider in this work derive from markets liberalization and from competition forces limiting extra-profits.

3. Markets liberalization, competition and Cooperative State

In this paper we argue that the new theory of economic regulation of PU, based on the valorization of the benefits of concurrence, is a logical consequence of the general policy aiming at the CS. In the literature, this approach is often named *pro-competitive regulation*. De Viti himself, in *Principi*, p.43, sustains

‘Every state intervention to satisfy a collective need implies the production of a service or a public good. However, the state does not need to fully replace the private firm, provided that it can regulate the latter in some way. Thus, for instance, if railway enterprises neglect to guarantee that persons and livestock are unharmed at level crossings, if they abuse of tariffs to favour some businesses and harm others, the state can intervene to eliminate these precise drawbacks, but without nationalizing railways.’

Of course, this argument does not disregard the crucial role played by public services which

‘[...] go back to influencing the production, the exchange, and the consumption of private goods and participate, also in this way, in the general equilibrium. Indeed, according to a good or a bad road network, for instance, the general equilibrium changes ...’ (Principi, p. 49)⁵

The modern theory of pro-competitive regulation adheres to this view, seeking efficiency gains by markets liberalization. When technology allows extra-profits to the incumbent firm, regulation is called on to establish constraints on tariff dynamics and quality levels. Regulation is also needed for a public firm, as the managers (and the politicians who put them in

⁵ Besides the *Principi*, De Viti deals with PU problems in *L'industria dei telefoni e l'esercizio di stato*, in 'Giornale degli Economisti', s.II, vol. I, September, 1890, pp. 279-306; *Entrate patrimoniali e demanio*, in 'Giornale degli Economisti', s.II, vol. IX, December 1894, pp. 487-517. The speeches in Parliament in 1911 about the destiny of the Acquedotto Pugliese and the articles in 'Il Popolo', in 1911-1913, on the bad railway service in the south of Italy, contain many emblematic insights of De Viti thought on PU (Cardini, 1995).

charge) may be induced to get monetary and non-monetary benefits (consensus, reputation and votes) which in any case distort resource allocation. Moreover, the fruition of PU services is often a right to be satisfied as a ‘universal service’, as the Constitution requires all citizens to be provided for, at least at a minimum level, without discrimination, interruption, at a sustainable price and at an adequate quality level. With universal service, regulation is carried out even if the markets are competitive.

But what is the actual meaning of the notion [...] *free competition between social groups giving rise to the CS configuration*, used by De Viti in *Principi*, p.40?

In the history of economic thought, the concept of competition is related to that of rivalry, especially between producers⁶. Concurrence exists when several potential rivals have free entry and act independently, so collusive conduct does not arise. Moreover, the reward of any economic activity is associated with the achievement of the result for which the rivals compete; if that result fails there is a monetary sanction.

This notion of actual concurrence is wider and less abstract than that of perfect competition. The latter derives from the *price-taking* behaviour of the rivals in the market, which gives rise to a decentralized mechanism able to re-conduct the strategies of self-interested agents to efficient cooperative outcomes – the Arrow-Debreu *Competitive Equilibrium* (Arrow and Debreu 1951) – while market systems, in which producers have non-cooperative behaviour (*price-making*), reach lower levels of economic efficiency⁷. Actual competition is instead characterized by the existence of *contestable market*, compatible also with oligopoly and even monopoly. The clue is that the simple threat of the entry of new competitors prevents the achievement of full discretionary power. A *contestable market* is also *sustainable* when potential entrants cannot apply lower prices than the *incumbent* ones, still satisfying the market demand and achieving positive profits. With a single-product firm, a constrained Pareto-efficiency *sustainable* equilibrium requires a price equal to average cost (second best) and thus no market power rent (Baumol et al. 1982). As

⁶ For instance Smith, Stuart Mill, Cournot and Edgeworth express themselves in this way (see Vickers, 1995), and De Viti de Marco knew those authors very well.

⁷ Recall that we distinguish: (i) *productive x-efficiency*, measured by the distance from the minimum cost frontier; (ii) *allocative efficiency*, measured by Lerner index (zero in perfect competition and Bertrand oligopoly, 1 in monopoly and an intermediate value in Cournot oligopoly); (iii) *industrial configuration efficiency*, given by the optimal number of firms in the market, given the prevailing technology. Long-running competitive equilibrium achieves all of these.

a consequence, the ‘market power wedge’ is null, with positive effects on growth and employment (van Sinderen and Kemp 2008).

Contestability also has the effect of increasing managerial effort towards productivity and cost enhancing, so as to increase x-efficiency even in an asymmetric information moral hazard context. Indeed, in a classical Principal (owner)-Agent (manager) relationship, competition has an insurance-type effect. If the owner can observe the performance of a manager of another firm, he can estimate his own manager’s effort and then increase the information to draw up a better, less risky contract. A further positive effect derives from the reputation a manager may obtain by giving up moral hazard strategies and the prospect of a better future job elsewhere.

Such competition by comparison is particularly widespread in PU markets where the firms are territorially distributed as local natural monopolies, such as water distribution. The so-called *yardstick competition* – i.e. price regulation relating to the comparison between actual and average performance – is often applied, also for allocating national funds. In the case of a natural monopoly, the auction for entrusting the service to a sole firm gives rise to an effective *ex-ante competition for the market*. Some basic theorems show that with a high number of risk-neutral competitors with a common ex-ante unknown unitary cost, the price supplied by the winning firm tends to be equal to the true one, without any communication between the bidders (Klemperer 1998, 2002).

All these forms of pro-competitive regulation emphasize the contestability of PU markets as a means for affirming the CS configuration and the consequent economic democracy based on the impartial and transparent confrontation between the various groups of citizens-voters.

4. The evolution of regulation models in the light of the Cooperative State

As far as the industrial organization of PU is concerned, De Viti’s equilibrated position and open view have not been confirmed over time. Until the 1980s, the literature and public finance textbooks have almost exclusively considered the model of direct production by a public, monopolistic and vertically-integrated enterprise. The alternative model of promoting the competition **in the market**, when attainable, or of regulating entrusted private enterprises, when selected by a competition **for the market**, has been quite neglected.

The main assumption of the traditional stream of literature was that the entrusted firm and the controlling public bureau shared a common objective function, given the political nature of the manager's appointment. As a consequence, industrial decisions on output supply and tariffs structure could be made within the national economic policy. The public enterprise model was also favoured by the prevailing natural monopoly technology and lack of contestability, given the absence of pressure by potential entrants. However, this model, initially imagined as derived from the *state as non-actor*, gradually became an expression of Acemoglu's *state as the grabbing hand* or De Viti's *monopolistic state*, given the inevitable problems of asymmetric information and many incipient conflicts of interest.

Indeed, the traditional model assumes *observability* by the public official of all the relevant variables – costs, productivity, managerial effort, profits – and the *completeness* of the delegation contracts. The first feature implies no Principal-Agent problems (adverse selection and moral hazard), while the second implies *verifiability* of the same variables by a third institution, such as a court (Laffont and Martimort, 2002). The traditional model requires, in other words, that the politician or the public office, in charge of controlling the public firm, can implement efficient output and the optimal tariffs structure by a simple command, followed by ex-post control of the firm's activity. However, in the case of incomplete contracts, the *command & control* model tends to degenerate because of non-benevolent political control, confused objectives, and the lack of transparency with regard to strategies.

In order to avoid the consequent, inevitable consumer exploitation, a new model of regulation⁸ needs, in theory and in practice, to be designed. The new model of *pro-competitive regulation* is, first of all, based on the separation of government and enterprise, thus applying the following indications by De Viti in *Principi* p. 77:

‘[...] *the most convenient solution occurs when: a) the State intervention, i.e. the increasing system of interference and constraints, remains within the limits rigorously required by collective need; and b), at*

⁸Theoretically, the new model originates from the results of the modern theory of information, starting with the contributions of Loeb and Magat (1979), Baron and Myerson (1982) and Laffont and Tirole (1986). The latter model has been extended in several directions by the ‘French school’ of Toulouse (Laffont and Tirole, 1993, Laffont 1994 and Laffont and Martimort 2002, Laffont 2005). Empirically, the new model has been widely applied especially in the U.K. (Armstrong, Cowan and Vickers, 1994), although with some implementation problems (Crew and Kleinderfer 2001, Crew and Parker 2006).

the same time, the superior technical industrial skill is exploited, without absorbing it (separation indeed)'.

On the other hand, De Viti argues that
'[...] *the deviations, due to political intrusion, increase the price the tax-payer has to pay for the production and provision of public services...*'
(*Principi*, p. 49).

A further aim of the new model is the selection of the industrial sectors in which the natural monopoly configuration does not apply and where it is possible to vertically disintegrate and liberalize the corresponding markets. This occurs when the new entry of competitors is promoted and when incumbent firm power is gradually reduced. Lastly, for sectors which are non-competitive as yet, the new model requires automatic rules for determining the tariff and prices dynamics (such as the Price-Cape rule) and the standard of quality.

From a public finance perspective the new model needs to link the tariffs structure to the unitary costs and to the level of individual consumption, following what De Viti de Marco himself called la '*legge contingente storica*', a historical tendency supported by technological innovation. The resulting cost-reduction should go with the shift from:

'...the principle according to which some tax-payers pay for others (tax-capacity criterion), to the principle whereby everyone pays according to his consumption, thus overcoming compensations and redistributions (tax-benefit criterion)' (*Principi*, p. 93).

From an institutional perspective, pro-competitive regulation implies the fundamental role played by independent regulatory authorities, which may, say, act as typical instruments of the Cooperative State. Indeed, one of the basic principles of the new regulation is to propose an alternative way of making public decisions other than those made by politicians. Indeed, in general terms, we may say that political and technocratic decisions are two imperfect methods of governance. One needs criteria to limit the non-benevolent behaviours of politicians in charge, the second requires criteria to guide decisions to assign specific responsibilities to technocratic bodies, of course under a mandate defined and monitored by the legislator.

According to Dixit (1996, 1997), public bureaucracy, in making production decisions, acts as a multitask agency under the power of many Principals – coalition parties in the government, parties in parliament, single ministries, higher level civil servants, unions – each one following

specific conflicting objectives (Dewatripont et al. 2000). Given too many contrasting multi-Principal tasks in such a complex scenario, the naturally risk-averse bureaucrat, when appointed to a managerial role, is disoriented by the different influences and tends to favour the strongest, representing the most powerful pressure group and certainly not the users. The users-citizens should instead be protected by a regulator whose efforts are directed to this one task, leaving other tasks to the various public offices. For these reasons the regulator must be a competent and independent agency, with this sole mission specified by the institutive act.

Laffont (1999, 2000) argues that the separation of agencies is welfare-enhancing, as it allows the available information to be divided among different authorities, thus limiting the power of politicians to carry out non-benevolent actions. Hence, the De Viti separation of production decisions from political decisions is a particular case of a “*beneficial separation of powers*”. The delegation of regulatory tasks to independent Authorities is functional to this aim, as it can contrast the conditions that sustain the MS configuration.

We may summarize the literature on independent regulatory authorities of PU, by using the contributions by Maskin and Tirole (2004) and Alesina and Tabellini (2007). According to these, a technocratic assessment appears preferable when: (i) the matter is very technical; (ii) social preferences are stable and performance criteria well-defined; (iii) the decisions in question and their effects are not easily observable by voters; (iv) the decisions are highly vulnerable to time inconsistency; (v) the decisions have a limited impact on income distribution within generations; (vi) the decisions significantly affect the distribution of income between generations; (vii) the decisions do not involve trade-off between incompatible objectives; (viii) the decisions entail benefits or costs to groups that are likely to be involved in political lobbying.

In the case of PU production and provision almost all the previous circumstances apply and thus the delegation to independent regulatory Authorities appears to be the more convenient solution.

5. Solving the surplus distribution trade-off: a formalization of the Cooperative State

Controlling the prices of a PU monopolist, whether private or public, is the main task of a regulatory authority. This welfare-enhancing action may be interpreted as a settlement of the distributive conflict between the users, the owner of the firm (politician or private entrepreneur) and the manager. The

school of Toulouse, founded by Laffont and Tirole in the mid-1980s, has suggested the formalization of a three players-game as follows.

- a. The *manager pay-off* is given by

$$U = \pi + T - \psi(e) = \tau - \psi(e), \quad (2)$$

where $\pi = R(q, \beta) - C(q, \theta, e)$ is the profit (or loss), given by the difference between the returns (as a function of output, q , with a specified quality, and demand characteristics, β) and the costs (as a function of q , of the managerial effort e , a parameter of x-efficiency, and of the technology θ). T is a transfer, negative (positive) if $\pi > (<) 0$, to (from) the owner. $\tau = \pi + T$, is the net transfer and $\psi(e)$ is the cost for guaranteeing the level e of the x-efficiency effort. $U > 0$ means that the manager gets a monopolistic informative rent, as he only observes θ , and e^9 .

- b. T represents the enterprise *owner (public or private) pay-off*, which contributes to collective welfare, once weighted by the marginal cost of public funds, the parameter $(1 + \lambda)$, i.e. the social value (> 1) of one € of transfer¹⁰.
- c. The *users pay-off* is given by the net consumer surplus $S^n(q, \beta) = [S(q, \beta) - R(q, \beta)]$, where $S(\cdot)$ is the gross surplus function.

The social welfare due to the PU provision in the CS can be reasonably formalized as a cooperative *Nash-bargaining* solution. Hence the function to be maximized should be the product of the pay-off functions. However, for simplicity, we may use the sum of these, as a linear approximation:

$$W = S^n - (1 + \lambda)T + U, \quad (3)$$

or

$$W = V(q, \beta) - (1 + \lambda)[\tau + C(q, \theta, e)] + U. \quad (4)$$

⁹ Note that the other players may observe ex-post q and the function $C(\cdot)$. Further β is considered common knowledge. Therefore, by inverting $C(\cdot)$, we obtain e as a function of q and θ . Hence, the latter remains the only adverse selection parameter whose revelation should be boosted.

¹⁰ $\lambda > 0$ because of the potential distortion originated by taxes for financing the transfer. If the firm distributes a dividend, the weight still remains since, conversely, some distortionary tax can be reduced by the same amount.

In (4), $V(.)=S(.)+\lambda R(.)$ is the social value of the PU, hence, using (2), the social welfare can be transformed as follows:

$$W=V(q,\beta)-(1+\lambda)[\psi(e)+C(q,\theta,e)]-\lambda U \quad (5)$$

According to (5), welfare increases with the social value of production $V(.)$ and decreases with the social costs $(1+\lambda)[\psi(.)+C(.)]$ and with the social cost λU of rewarding the manager with the rent. The regulation makes a beneficial action of redistribution of the total surplus, by shifting the total surplus towards $V(.)$, instead of to the costs or to U . Given an appropriate contract, the manager may be induced to give the owner the best self-selection technology signal $\hat{\theta}$. This revelation mechanism increases $V(.)$ via q , and reduces the costs $C(.)$, by boosting e . Finally, by regulating U , with T , the social cost of the rent, due to information asymmetry, is limited.

Here we claim that the solution of this three-player (users/manager/owner) game is a social incentive contract displaying a way of achieving, even with asymmetric information, a second best non-cooperative result, which might be considered the nearest outcome to that implied by the De Viti CS configuration.

Formally we may summarize this conclusion as follows

Proposition 1: Cooperative State versus Toulouse regulation model

The equilibrium of the CS regulation game is given by a contract $\{q(\hat{\theta}), T(\hat{\theta})\}$ maximizing (5) s. t. the constraints of:

- (i) *self-selection: $U(\hat{\theta} = \theta, \theta) \geq U(\hat{\theta}, \theta), \forall \hat{\theta}, \theta$ - and*
- (ii) *participation: $U(\hat{\theta} = \theta, \theta) \geq 0$.*¹¹

We may take this historical relationship between De Viti and the school of Toulouse further: Laffont (2000) extends the previous basic model, looking at the *political economy* context where the legislator is not ex-ante informed on the *business conditions* of the PU enterprise and proposes $\text{var}(\lambda)$ as a synthetic measure of this uncertainty. He suggests two ways of reaching welfare maximization: a constitutional law establishing, under a ‘veil of ignorance’, the industrial policy rules, or the delegation of these to

¹¹ Taking into account (2) and note 8, the self-selection constraint may be written as $\max_C \tau(C) - \psi(e(C))$, i.e. the manager is allowed to ‘reveal’ (best strategy) the cost of maximizing his pay-off function. The participation constraint is simply a condition for the manager to remain in the contract.

politicians by means of some post-constitutional decisions. The politicians are better informed than the founding fathers, but they may want to favour the interests of the majority instead of all the citizens. With two types of voter, the collective surplus is now

$$S^C(q,\beta) = a S(q,\beta) + (1-a)\gamma S(q,\beta) = [a+(1-a)\gamma] S(q,\beta), \quad (6)$$

where a is the proportion of type-1 consumer-voter and $(1-a)$ of type-2, and $\gamma > 1$ is an index of preference differentiation.

By inserting (6) in (3), and then in (5), we describe a constitutional decision, as it is taken ex-ante by an average risk-neutral voter under a veil of ignorance (Aghion, Alesina and Trebbi 2002). If we want to show, instead, that the alternative of delegation to politicians and type-1 voters is the majority, the function to be inserted in (3) and (5) is now

$$S^C(q,\beta) = a^* S(q,\beta), \text{ with } a = a^* > (1/2) \quad (7)$$

Laffont (2000) shows that maximizing W with a constitutional decision is more desirable when disinformation on the industry is sufficiently limited (a low $\text{var}(\lambda)$). In the opposite case, it is better to follow the delegation to politicians elected by the majority.

However, what we prefer to propose with our representation of the CS is a third mode, the institution of an independent regulatory authority, more informed than politicians and bureaucrats, and not ‘capturable’, i.e. unwilling to care only for the interests of the majority of voters.

6. The choice of enterprise ownership: De Viti approach versus modern Political Economy

In *Principi*, p. 44, De Viti de Marco argued that

‘[...] a popular state, without any interest conflict between the ruling and ruled classes, or where the former are not only inspired by their own interests, [...] only the economic principle of maximum benefit (‘massimo tornaconto’) is called on to establish the appropriate division of the productive functions between private and public enterprise.

and then proposed a cost-benefit institutional analysis:

‘[...] in order to decide whether production should be undertaken by a private firm or by the state we must look at the result of the comparison between the service quality and its cost, in both cases’ (Principi, p.45)

Modern theory follows an analogue logic process which begins by identifying the conditions under which firm ownership type is economically insignificant. These are linked in some way to the Coase theorem as referring to a context of complete contracts, negligible transaction costs, correct evaluation of the production by the state, and the presence of many risk-neutral private firms. In this context, according to the celebrated *fundamental theorem of privatization* by Sappington and Stiglitz (1987), the maximum social benefit can be achieved by delegating production to a private firm, selected by public auction and possibly financed by an optimal non-distortionary public transfer. Therefore, when these strong conditions do not apply, the nature of firm ownership is no longer insignificant and an institutional cost-benefit analysis must be carried out to choose the best alternative¹².

There are several ways to approach this theory of privatization; here we concentrate on the stream of literature which endogenizes the self-interest behaviours of the main institutional actors, such as politicians, public officials, managers and unions (Shleifer 1998). This kind of work, we may say, is the direct heir to De Viti thinking. Indeed, as regards privatization versus nationalization, in *Principi* he wrote:

‘According to the principle of ‘massimo tornaconto’, nationalization should occur when the higher efficiency of the public enterprise can be proven. It is instead fought a priori by the groups representing the capitalist defending their own interests. Therefore, it may happen either that it is not chosen when it would be better for the collectivity, or it is chosen when it is worse, depending on whether the action of the state is ruled by the political force of capital or of labour’. (Principi, p. 48)

De Viti was generally in favour of the private firm scheme for the PU, but he made this surprising statement to exclude any ideological prejudice in his reasoning. Indeed, with regard to this important economic decision, many important contributions in the modern theory of privatization have argued in favour of the private firm. They argue that, with a public firm, it is likely that the principle of ‘massimo tornaconto’ would be disregarded

¹² The topic can be considered as an application of the new economy of the firm in a context of incomplete contracts (Grossman and Hart, 1986; Hart and Moore, 1990). See also Hart, Shleifer and Vishny (1997).

and that the specific interests of the different political forces in play would prevail.

Boycko, Shleifer and Vischny (1996) argue that with a public enterprise, the politicians in charge tend to acquire, by means of public expenditure, the right to control labour employment, while with a private firm this is allocated to the managers, who take on the risks of inefficient choices. Dyck (1997), looking at the experience of Eastern Germany, shows that an important benefit of privatization is the creation of an efficient market of managers, surpassing the public officials in this role. However, Bös (2000) models a game where a good, perfectly informed, manager can indeed orient the economic results of a privatized firm to his own advantage. Of course, in any case, the role of an independent regulatory authority could be highly prized.

Laffont (2000), in applying the model described in the last section to the privatization process, actually ends up by formalizing the above-mentioned De Viti statement¹³. If the majority, i.e. type-1 voters, own shares of the private firm, they are able to extract the informative rent in exactly the same way as the politicians in charge can do with the public firm. In the latter case, the choice between the two forms of ownership is insignificant for the ruling class. In the opposite case, with a type-2 voter majority, the latter, when designing the legal framework, would not consider the rent going to type-1 individuals. Hence the level of production, leaving private ownership to the type-1 group, would be inferior (the price to users higher) than that realized by the public enterprise, where the rent would flow to type-1 voters, the majority in charge of the government. Laffont shows that public ownership is dominant in terms of welfare change when the information asymmetry on the firm by the regulator is negligible. In other words, shifting the ownership from type-1 to type-2 voters, i.e. from private to the government, we have: $\Delta W > 0$, with W as in (5), and $S^C(q, \beta)$ as in (6), and with $\Delta \theta \geq 0$ (no information asymmetry and no rent). Restraining private ownership (i.e. to type-1, when type-2 is the ruling class in government) is, instead, more desirable with an increase of $\Delta \theta$ and then of the rent, when the two types are slightly differentiated in preference and the population almost equally distributed. Formally it is: $\Delta W < 0$, with $\gamma \rightarrow 1$ and $a^* \rightarrow (1/2)$.

Indeed, the redistribution policy is strongly related to the privatization policy, and according to Schmidt (2000), privatization simply takes away the support of inefficient measures of income redistribution. Biais and Perotti (2002) have theorized a ‘Machiavellian’ policy of pricing

¹³ See also the extensions of the model in Laffont (2005).

the shares on sale, i.e. just to ensure the ruling party maintains power. For instance, they show how *underpricing* carried out by conservative parties in power induces the middle class voters to buy further shares of privatized firms and, in the end, to vote for conservative parties, thus keeping them in power. If the degree of inequality is high, an equilibrium exists where a right-wing government privatizes the firm and applies a price which is lower than that of *market-clearing* and rations the shares on sale. Furthermore, the right-wing party itself again wins the election.

We argue that, in a democratic Cooperative State, the price of sale should not be ‘Machiavellian’ but ‘Devitian’. The sale on the market of the shares of a public enterprise should, in the CS configuration, occur if and only if social welfare gain is expected. An approximation of the latter can be represented by elaborating on (5), as follows:

$$\Delta W = \lambda \Delta R + \Delta \Phi \quad (8)$$

where $\lambda \Delta R$ represents the social value of revenue from sale and $\Delta \Phi$ represents the social value of the change from public to private ownership, i.e., by differentiating (4) net of $\lambda \Delta R$,

$$\Delta \Phi = \int_{t_0}^{\infty} E \{ dS(t,.) - (1 + \lambda) [d\psi(t,.) + dC(t,.)] - \lambda dU(t,.) \} e^{-rt} dt \quad (9).$$

Therefore we may define:

$$\Delta \Phi \equiv VS_p - VS_g \quad (9a)$$

where VS_p is the value for the collectivity at time t_0 , of the firm once under the control of private shareholders and VS_g is the corresponding value of the firm which is still public.

Both notions of value come from discounting the flow of expected future social – direct and indirect – benefits and costs computed at the shadow prices, according to the standard techniques of social *cost-benefit analysis* (Hindriks and Myles, Ch.25, 2013).

$\Delta \Phi$ can be positive or negative. If the ownership change is simply a shift from a public monopoly to an unregulated private one, the objective of a public enterprise to get allocative efficient performances, rather simply to maximize profits, will result in $\Delta \Phi < 0$. As a consequence, in order to be convenient and to make money, the sale price must be high. If the sale is

preceded by a large-scale process of liberalization and competition promotion together with some independent regulation mechanism, the gap between the two values is reduced up to the change of the sign. In this case, with a positive and high $\Delta\Phi$, the convenience of the sale may also occur with underpricing.

If P is the sale price, going from the private to the public coffer, it is $\Delta R=P$. Therefore, using (8), we may summarize as follows:

Proposition 2: privatization cost benefit in the Cooperative State

The sale of a public asset is convenient if the effective price P is greater than P_g , the minimum price acceptable by the state, i.e. the price at which the society is indifferent to the transaction, formally

$$P > \frac{|\Delta\Phi|}{\lambda} \equiv P_g \Rightarrow \Delta W > 0 \quad (10)$$

Social welfare always increases, *ceteris paribus*, with the sale price as $\partial\Delta W/\partial P = \lambda > 0$, i.e. one more € from privatization has a value equal to the amount by which the marginal cost of public funds is higher than 1. Hence, the state will try to extract from the potential buyers the maximum price they are willing to pay, P^* . This is the amount at which private buyers evaluate this firm and it is equal to V_p , the value of the *cash-flow* net of the reward to the manager.

$$P^* = V_p = -\int_{t_0}^{\infty} E\{T(t,.)\} e^{-rt} dt = \int_{t_0}^{\infty} E\{\pi(t,.) - \tau(t,.)\} e^{-rt} dt \quad (11)$$

Thus the maximum welfare increase from the sale to a potential buyer is:

$$\Delta W^* = \Delta\Phi + \lambda V_p \quad (12)$$

and thus, given (10) and (11), the maximum welfare increase, measured in terms of fiscal revenue, is given by the difference between the maximum and the minimum price:

$$\Delta W^*/\lambda = P^* - P_g \quad (13)$$

In any case, the effective price will fall within an interval defined by the outcome of transaction and the chosen techniques of sale (*beneficial sale price interval*):

$$P_g \leq P \leq P^* \quad (14)$$

Note that, despite it being advantageous to get the highest price from a given buyer, it does not go without saying that the firm should be transferred to the buyer offering the highest price, as other external elements of evaluation may be considered. If the private buyer is chosen by a multi-dimensional auction selection, the quality standard of the service, the volume of planned investments and the employment policy can be evaluated together with the price of sale. Therefore, the firm can go to a buyer ensuring an ex-post higher social value, VS_p , and thus a lower P_g . This would imply a reduction of the lower limit of the beneficial sale price interval. Further, in general, a higher VS_p is correlated to a lower V_P , and thus a lower P^* . The latter will be lower with the liberalization of the PU market and with hard competition, dissipating all expected extra-profits. Hence, the upper limit of the interval can also decrease.

7. Some final comments

The idea that the processes of privatization with the regulation of *Public Utilities* can produce social welfare-enhancing effects has only recently been partially accepted in economic literature and in institutional settings. The resistance to delegating the organization of the provision and control of PU management to separate institutions such as private firms and regulatory and antitrust authorities, is still strong. Nevertheless, according to some meaningful modern theory results, if a correct and robust pro-competition regulation structure is designed and carried out, there are strong elements for increasing welfare. These relate to monopoly rent dissipation, impartiality in public producer selection, contestability of shares ownership, the ruling out of dominant positions, and other consequences.

In the previous sections we have shown how Antonio De Viti de Marco, one of the main public finance scholars in the Italian tradition, was able, at the end of the nineteenth century, to reach analogue conclusions by revising various public finance fields. He followed the methodological approach of proposing policies which could gradually make the cooperative logic of a democratic state configuration (CS) prevail over the strategic logic of an absolute state configuration (MS).

In this paper, using retrospective analysis, we argue that on the one hand it is actually possible to relate the MS configuration to degenerations

of the old model based on the public monopolistic enterprise and on the other to link the CS configuration to the valuable features of the new regulation model, based on rivalry among producers, privatization of public assets and an automatic rule for tariff dynamics.

The Cooperative State is acknowledged in the theory of *Public Choice*, developed in Virginia and Chicago universities in the middle of last century, as the democratic configuration for proposing economic policy rules supported by a large, qualified majority of parties and thus voters. In this way De Viti de Marco is related to Knut Wicksell, who was the main supporter of the unanimity rule for public finance decisions (Buchanan 1960, Buchanan and Tullock 1962). The modern theory of *Political Economy* – as presented and developed by Persson and Tabellini (2000) and Besley (2007) and, more recently analytically reviewed by Acemoglu (2013) – refers, within the same scenario, to the view of the *state as a nexus of cooperation*. This state view admits the presence of opportunistic behaviours on the part of the agents, but does not emphasize conflicts between groups of agents. By means of its coercive powers, it encourages cooperation between agents, serving the interests of all the citizens by boosting the orderly behaviour of politicians.

In this regard, *politician insulation*, originally formulated by Brennan and Buchanan (1980), is a crucial concept. It can be measured by the share of votes needed, according to the constitution, for promulgating laws in some fields (Aghion, Alesina and Trebbi 2002). In designing the parliamentary mechanisms and the working of the institutions making economic policy there is a constitutional *trade-off*. On the one hand, an *insulated leader* – for instance a Prime Minister with much power, not conditioned by the minority and without effective ex-post controls – is not easily ‘blocked’; thus he can, without hindrance, carry out the needed actions and the useful reforms. However, on the other hand, he is also possibly allowed to inflict on individuals any form of expropriation. *Non-insulated leaders*, instead, are constrained to make cooperative decisions that, once taken, could provide higher levels of social welfare, but can ex-ante block the government from reaching the needed super-majority, often ending in an impasse. From some political economy viewpoints, this kind of immobility is related to proportional electoral systems and to the coalition governments arising from it.

The new model of PU regulation, with a multiplicity of actors looking at cooperative solutions, is theoretically designed to overcome the drawbacks of the old model. The latter entrusts to non-benevolent insulated politicians, and to their faithful public bureaucracy, easily capturable by interest groups, all the production decisions of a *Public Utility*. The new

regulatory system is in theory able to maximize social welfare, taking the managerial decisions away from the politicians, as De Viti de Marco theorized in his main contributions to the CS configuration.

However, the optimal regulation model we refer to in this work is, like the CS, rather an ideal solution to aspire to, though it is not easily implementable. Nevertheless, the conditions for approaching the optimal outcome are institutional features based on three elements: (i) the contestability of the fundamental markets (actual, potential and artificial competition); (ii) the separation of responsibility for designing social strategies from the responsibility for the management and organization of PU; (iii) the entrusting of regulation and control to independent structures, located in an intermediate position between politicians and the firms. As a consequence, we believe that any institutional change and reform to carry out these conditions is a move towards the achievement of the Cooperative State and of economic democracy, idealized by Antonio de Viti de Marco.

References

- Arrow, K.J, Debreu, G. (1951), Existence of an Equilibrium for a Competitive Economy, *Econometrica*, 22, 265-290.
- Acemoglu, D. (2003), Why Not a Political Coase Theorem, *Journal of Comparative Economics*, 31, 620-652.
- Acemoglu, D. (2013), *Political Economy Lecture Notes*, Harvard University, Cambridge, Mass.
- Aghion, P., Alesina, A., and Trebbi, F. (2002), Endogenous Political Institutions, *Discussion Paper n.1957*, Harvard University, Cambridge, Mass.
- Alesina, A., Tabellini, G. (2007), Bureaucrats or Politicians? Part I : A Single Policy Task, *American Economic Review*, 97(1), 169-179.
- Armstrong, M., Cowan, S. and Vickers, J. (1994), *Regulatory reform, economic analysis and British experience*, The MIT Press, Cambridge, Mass.
- Baron, D.P., Myerson, R. (1982), Regulating a Monopolist with Unknown Costs, *Econometrica*, 50, 911-930.
- Baumol, W.J., Panzar J.C. and Willig, R.D. (1982), *Contestable Markets and the Theory of Industry Structure*, Harcourt Brace Jovanovich, New York.
- Besley, T. (2007), *Principled Agents? The Political Economy of Good Government*, Oxford University Press, Oxford.

- Biais, B., Perotti, E. (2002), Machiavellian Privatization, *American Economic Review*, 92 (1), 240-259.
- Bös, D. (2000), Privatization under Asymmetric Information, *Indian Journal of Applied Economics*, 8, 285-326.
- Boycko, M., Shleifer, A. and Vishny, R.W. (1996), A Theory of Privatization, *Economic Journal*, 106, 309-319.
- Brennan, G, Buchanan, J.M. (1980), *The Power to Tax. Analytical Foundations of a Fiscal Constitution*, Cambridge University Press, Cambridge, Mass.
- Buchanan J.M. (1960), 'La Scienza delle Finanze, The Italian tradition in fiscal theory', in J.M. Buchanan (ed.), *Fiscal theory and political Economy, Selected essays*, The University of North Carolina Press, Chappel Hill.
- Buchanan, J.M, Tullock, R. (1962), *The Calculus of Consent*, University of Michigan Press, Chicago.
- Cardini, A. (1985), *Antonio De Viti de Marco. La democrazia incompiuta (1858-1943)*, Laterza, Bari.
- Cardini, A. (1995), Antonio De Viti de Marco (1858-1943) e le origini finanziarie della dittatura e della democrazia, in Pedone, A. (ed.), *Antonio De Viti de Marco, tra liberismo economico e democrazia liberale*, Laterza, Bari.
- Crew, M.A., Kleinderfer, P.R (2002), Regulatory Economics: twenty years of progress?, *Journal of Regulatory Economics*, 21 (1), 5-22.
- Crew, M.A., Parker, D. (eds.) (2006), *International Handbook on Economic Regulation*, Edward Elgar Publishing, Northampton, Mass., USA.
- Dewatripont, M., Jewitt I. and Tirole, J. (2000), Multitask Agency Problems: Focus and Task Clustering, *European Economic Review*, 44, 869-877.
- Dyck I.J.A. (1997), Privatization in Eastern Germany: Management Selection and Economic Transition, *American Economic Review*, 87 (2), 565-597.
- Dixit, A. (1996), *The Making of Economic Policy*, The MIT Press, Cambridge, Mass.
- Dixit, A. (1997), Power of Incentives in Private versus Public Organizations, *American Economic Review*, 87(2), 378-382.
- Fausto, D. (2002), An Outline of the Main Italian Contributions to the Theory of Public Finance, in Fausto, D., De Bonis V.(eds.), *The Theory of Public Finance in Italy from the Origins to the 1940s*, Il pensiero Economico Italiano, Istituti Editoriali e Poligrafici Internazionali, Pisa.

- Grossman, S.J., Hart, O. (1986), The Costs and Benefits of Ownership: a Theory of Vertical and Lateral Integration, *Journal of Political Economy*, 94, 691-719.
- Hart, O., Moore, J. (1990), Property Rights and the Nature of the Firm, *Quarterly Journal of Economics*, 98, 1119-1158.
- Hart, O., Shleifer, A. and Vishny, R. (1997), The Proper Scope of Government: Theory and an Application to Prisons, *Quarterly Journal of Economics*, 112, 1127-1161.
- Hindriks, J., Myles, G.M.A. (2013), *Intermediate Public Economics*, II edition, The MIT Press, Cambridge, Mass.
- Klemperer, P. (1998), Auction Theory: a Guide to the Literature, *CEPR, Working Papers*, n. 2163.
- Klemperer, P. (2002), What Really Matters in Auction Design, *Journal of Economic Perspectives*, 16 (1), 169-187.
- Laffont, J.J. (1994), The New Theory of Regulation: ten years after, *Econometrica*, 52, 507-537.
- Laffont, J.J. (1999), Political Economy, Information and Incentives, *European Economic Review*, 43, 649-669.
- Laffont, J.J. (2000), *Incentives and Political Economy*, Oxford University Press, Oxford.
- Laffont, J.J. (2005), *Regulation and Development*, Cambridge University Press, Cambridge.
- Laffont J.J., Martimort D. (2002), *The Theory of Incentives: the principal-agent model*, Princeton University Press, Princeton.
- Laffont, J.J., Tirole, J. (1986), Using Cost Observation in Regulated Firms, *Journal of Political Economy*, 94, 614-41.
- Laffont, J.J., Tirole, J. (1993), *A Theory of Incentives in Procurement and Regulation*, The MIT Press, Cambridge, Mass.
- Loeb, M., Magat W. (1979), A Decentralized Method of Utility Regulation, *Journal of Law and Economics*, 22, 399-404.
- Maskin, E., Tirole, J. (2004), The Politician and the Judge: Accountability in government, *American Economic Review*, 94(4), 1034-1054.
- Persson, T., Tabellini, G., (2000), *Political Economy: Explaining Economic Policy*, Cambridge University Press, Cambridge, Mass.
- Sappington, D.E.M., Stiglitz, J.E. (1987), Privatization, information and incentives, *Journal of Policy Analysis and Management*, VI (4), 567-582.
- Schmidt, K.M. (2000), The Political Economy of Mass Privatisation and the Risk of Expropriation, *European Economic Review*, 44 (2), 393-421.
- Shleifer, A. (1998), State versus Private Ownership, *Journal of Economics Perspectives*, 12, 133-150.

- Steve, S. (1995), La finanza di Antonio De Viti de Marco, in Pedone, A. (ed.), *Antonio De Viti de Marco, tra liberismo economico e democrazia liberale*, Laterza, Bari.
- van Sinderen, J., Kemp, R. (2008), The Economic Effects of Competition Law Enforcement: the case of The Netherlands, *De Economist*, 156(4), 365-385.
- Vickers, J. (1995), Concepts of Competition, *Oxford Economic Papers*, 47, 1-23.