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A MONOPOLISTIC STATE IN COMPETITIVE MARKETS

How State Ownership and State Intervention affect competition

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To my family,
Graziella, Paolo, Ilaria, Luca and Pietro.

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1. INTRODUCTION

1.1 AIM OF THE RESEARCH

The present paper is an application of Competition Policy to State-Owned Enterprises (SOEs) and to State interventions in the market. Usually, the theme of competition theory and competition law is dealt with assuming a “free market” (i.e. a market with no regulatory constraints and in which the Government plays a “neutral role”) and the private ownership of the entities populating this market. Such assumptions are justifiable on the base that they simplify the analysis of the functioning of the market and the understanding the role of competition. However, these assumptions represent more an exception than the rule: the Government plays a central role in almost every market which can be rarely considered “neutral”. Such interventions range from State-ownership of a firm, financing and subsidizing some entities rather than others, creation of statutory monopolies, bail-out of companies in times of crisis, regulating markets rising or reducing barriers to entry, imposition of structural modifications and behavioral remedies and so on.

The aim of the paper is to analyze the relationships between a selection of State interventions (State Ownership, privatization and liberalization), and the market, from a perspective of Competition Authorities. The analysis will be carried out applying the “tools” of competition theory and antitrust law that are usually applied to private enterprises, to the State, to provide an answer to the question: how State ownership and State intervention affect competition?

It is not the aim of the present research to provide a general cost/benefits analysis of the intervention of the State in markets. It is the belief of the author that such intervention is essential in many sectors of the economy and, even if it may distort competition, this does not directly implies a decrease of social welfare. Instead, taking the existence of the Government for granted, the present research provides a list of possible anticompetitive behaviors and distortions that might affect competition. An understanding of such issues is fundamental for the designating of the modern role of the state in competitive markets.

1.2 AN EVERGREEN ISSUE

The role of the State in the economy is a never-ending debate, moving back and forth between two main models: an interventionist State, which directly controls enterprises of strategic importance, and a State characterized by a limited production of goods and services but which presents a more severe regulatory intervention, often carried out by “external authorities” (Delbono, 2009). Competition authorities are examples of “external authorities”, they are agencies entrusted with the power to oversee the functioning of markets and competition. Not surprisingly, the origin of modern Competition Law (Antitrust Law) is to be found in the United States, a country that is traditionally identified with the latter model.

For the whole history of the States, the succeeds of different political movements and the happening of historical events have taken Governments in a continuous shifting from one model to the other: while the left wing movement during the end of 1960s called for a greater involvement of the State for correcting market failures, during the Regan’s and Thatcher’s Governments in the 1980s, there was a step off in the direct role of the State towards the privatization of the main SOEs and liberalization of the markets; such liberalization approach has been taken by the European Union also starting from the 1980s and gradually proceeding until nowadays.

One recent case in which such issues are pivotal is provided by the bailouts and subsidies provided to financial stressed companies consequent to 2007 financial crisis. To combat the current crisis, governments have been making large-scale interventions in both the banking system and in the real sector economy, which have important effect on competition. In the banking sector, the states relied on injecting liquidity through direct assets purchases, providing guarantee schemes to cover the liabilities of financial institutions, state funding and the acquisition of shares, causing the partial nationalization of some of the major banks (Organization for Economic Co-operation and Development, 2009). These state interventions arose several issues for the Competition authorities on regards of the safeguarding of the contestability in the financial markets. The acquisition of stakes in banks conveys significant market power and rise concentration in the industry. Further, the provision of public capitals might favor some enterprises

(even inefficient ones) for the detriment of other institutions. In this setting, anti-competitive effects may occur, thus careful and timely exit-strategy should be planned and the nationalized institutions should be soon returned in the private hands in a neutral and transparent way (Organization for Economic Co-operation and Development, 2009, p. 10). Furthermore, the bailout of firms in the real sector may also hinder competition in the long run. The creation of “too big to fail” entities, the centralization of market power in few National Champions, the rising of barriers to entry to protect competitors are all examples of State interventions which might have anti-competitive effects. While all these interventions have precise objectives to safeguarding employment, production and growth and so on, the effect of competition are often not immediate and have long-run scope, thus understanding, anticipating and correcting ex-ante these type of anti-competitive behaviors that might arise becomes crucial.

1.3 STRUCTURE OF THE RESEARCH: TWO TYPES OF STATE INTERVENTION

The rest of the research is structured in three main parts: Chapter 2 analyzes the State-Owned Enterprise and discusses their potential effects on competition; Chapter 3 discusses the phenomenon of Privatization and Liberalization; lastly, Chapter 4 provides a conclusion.

1.3.1 CHAPTER 2: STATE OWNERSHIP

The subject of the second chapter is the State-Owned Enterprise. This being defined as any undertakings that is fully owned and funded by a State body (Minister, Government or other State authorities). The existence of such enterprises is associated with the existence of the State. Many sectors of the economy have been “closed” to competition and provided with a legal monopoly granted an SOE. Such legal monopoly is fundamental to allow the designated firm to attain objectives other than profit maximization, such as income redistribution, Universal Service Obligation, full employment and so on. It will be argued that the same existence of such objectives may cause the SOE to behave as a monopolist (and to abuse of its dominant position) in sectors where it is not “required” to do so, namely in markets where state monopoly is not a necessary for their well-functioning. A selection of anti-competitive practices that the SOE have the ability

and incentives to undertake are discussed: namely predatory pricing and rising rivals' costs strategies.

1.3.2 CHAPTER 3: PRIVATIZATION AND LIBERALIZATION

The third chapter takes an opposite path, and analyzes policies which act to reduce the State's direct intervention in the market: these policies are privatization and liberalization. Privatization is that phenomenon by which public ownership is handed over, entirely or partially, to private hands. Liberalization is the opening up of a market to competition, thus to entry. Both terms are "fuzzy" and their effects are counterintuitive. While they are both associated with the withdrawal of State ownership; the intervention of the State might actually increase, taking a form of regulatory intervention rather than direct ownership. This type of intervention might also raise competition concerns. In section 3.1.3 are discussed the main concerns which arose from privatization implemented alone (without liberalization). In section 3.2.2 are discussed the concerns that arose from liberalization and privatization policies implemented together: strategic investments, foreclosure of network access divided in price-strategies (margin squeeze) and non-price strategies (reducing quality of inputs and delay provision of access), and lock-in customers and rising switching costs.

1.4 SOURCES

The author's interest for the subject arose from four courses taken at LUISS University and at the Utrecht School of Economics: Competition Theory and Practice (taught by Professor Peter D. van der Meer), Business Law (taught by Professor Rudolph J.R. Peritz), Industrial Organization (taught by Professor Riccardo Martina) and Antitrust and Regulations (taught by Professor Andrea Renda). All of these courses took different perspectives on the same issue of competition (from Industrial Organization models to the analysis of competition law and regulations) which have all been used in the present research.

The literature used draw from sector-specific analysis of markets and competition effects and case law, to broad theoretical models applicable to all sectors and to competition in general. Although sector-specific literature was fundamental for the

understanding of the main issues, the research takes a horizontal approach, thus not analyzing a specific market but drawing conclusions from different experiences.

2. OWNERSHIP

2.1 WHAT IS AN STATE-OWNED ENTERPRISE?

It is good practice to begin by providing a narrow definition of an SOE. The term “State-owned enterprise” (SOE) has been used in official statistics in reference to “business entities established by central and local governments, and whose supervisory officials are from the government” and further includes only “wholly state-funded firms” (Organization for Economic Co-operation and Development, 2009). It is important to consider how this definition of SOE differs from the more general definition of “Public enterprise”: the latter being defined as “organizations which are entirely or mainly, owned and/or controlled by the public authorities consisting of establishments which by virtue of their kind of activities, technology and mode of operation are classed as industries”¹. Thus SOE statistics do not cover state-holding enterprises, privatized enterprises, regulated enterprises, Public Private Partnerships (PPP) and other forms of hybrid state and private ownership. Some of the aforementioned kinds of Public enterprises will be treated in the following chapters. An SOE is an undertaking which by definition is involved in an economic activity, i.e. “any activity consisting in offering goods and services on a given market” (Organization for Economic Co-operation and Development, 2009b). However, it is not necessary that the activity is intended to earn revenues. Further an SOE is a “special” kind of undertaking, as it is fully funded by a State, and therefore is controlled, or supervised, by the legislative authority, be it a Government, a Minister, or other parties.

In modern history, State-owned enterprises have always existed and have always had a considerable impact on their respective nations’ economy in different magnitudes. Historically, there had been alternate “waves” of nationalization (thus enlarging state ownership) and privatization. In the book “The Rise and Fall of State-Owned Enterprise in the Western World” (2000), the author divides modern history in three time frames: a first one from the Renaissance to the end of the 19th century, a second one which lasted for the first forty years of the 20th century and

¹ Official definition of “Public Enterprises” contained in the Glossary of Statistical Terms of the OECD statistical portal stats.oecd.org/glossary.

the third one from the end of the Second World War to the beginning of our century. In the first period, nationalization had been conceived as having a primary role in the process of “catch-up growth”, namely the process of exploiting the technologies and innovations developed during the Industrial Revolution in England, but whose implementation lagged considerably in continental Europe (Eichengreen, 2008). Nationalizations were also used in the early 1930s, in particular by those countries most affected by the economic crisis of 1929. Finally, the apex of nationalization begins after World War II and is defined by Toninelli (2000) as the “Great Age” of Nationalization, which foreshadowed its decline holding over until present. Of particular interest is the structure of the state shareholding undertaken in the 1950s in Italy: in 1956 it was founded the Ministry of State Shareholding (“Ministero delle partecipazioni pubbliche”) which ruled over all the Italian SOEs. Since the late 1970s, the fortune of Public Enterprises has declined constantly and nations undertook significant privatization programs during the 1980s and the 1990s. The reasons and effects of privatization will be taken into account in the next section. At this point it is important to underline that even after the privatization wave, the direct role of the state in the economy has not lost its relevance.

The presence and impact of state-owned enterprises largely vary in different states. In nations such as Finland SOEs’ asset value accounts for 80% of national GDP and employs 10% of the labor force; while there are countries like Spain where the public sector’s asset value and share of total employment approximate to 0% (Organization for Economic Co-operation and Development, 2005).

The direct intervention of the State in the economy is theoretically grounded in the notion of “market failure”, i.e. that situation in which the market is not able to efficiently allocate goods and services. This type of failure arises especially in some particular sectors, which still are the most frequent targets of State intervention. More specifically market failures arise especially in the presence of Natural Monopolies (such as the production of gas and electricity, the implementation of railways and so on), Public Goods (goods in which it is impossible to exclude consumers, who act as free riders), Merit Goods (such as health care and education) and Externalities (Organization for Economic Co-operation and Development, 2005). Most of the markets where SOEs are present

embrace some of these characteristics. A clear specification of the different sectors traditionally ruled by the States is proposed by Bös (1986):

- 1) public utilities, communication and transportation
- 2) basic goods industries (oil, steel, electricity, etc.)
- 3) banks, insurance and social security
- 4) education and health

Almost all OECD states still participate in the above mentioned sectors, and even after the waves of privatization, governments still hold important shares of these markets. Nevertheless, as Toninelli (2000, p. 4) writes: “although public enterprises are commonly assumed to operate only in a limited number of natural monopolies, their range of activity is potential limitless”.

The concept of “Market failures” is thus one of the main theories in which the process of nationalization is rooted. However, recognizing the presence of market failure helps to understand where the problem is, but it does not tell how to correct it. Therefore, we should specify what the reasons for Nationalization are, or better, what objectives the State has when it decides to rule a sector of the economy.

2.2 OBJECTIVES OF AN SOE

In order to understand the behavior of a State-owned enterprise we need to understand its main objectives, which is the aim of the current section. In order to explain which the underlying drivers are of an SOE, we should answer the question: whose is in charge of running an SOE? The answer “the public authority” is too general because there are actually two main players in this respect: one is the public authorities, such as Ministries or the parliament, the second one are managers. Therefore I will distinguish between two kinds of objectives: first, “formal” objectives, at which the public authority aims, and then managerial objectives, which the actual drives of the choices of the SOEs’ managers. Several generalizations of the “formal” objectives have been proposed: first are presented two classifications: one by Toninelli (2000) and one by Rees (1976). Then, the more “realistic” approach is taken in order to understand which reasons can explain SOEs managers’ decisions, introducing the principal-agent problem in the Public sector.

2.2.1 THE FORMAL OBJECTIVES

According to Toninelli there are three main motives for nationalizing an economic activity. First of all there are political and ideological reasons: nationalization is one of the tools of the government to accomplish their political agenda. For instance, state ownership had been undertaken “as an instrument for achieving ‘genuine’ industrial democracy” (Toninelli, 2000, p. 6), with protectionist aims, or to impose an autarchy regime such as at the time of the fascist regimes in Italy, Germany and Spain. Further, there are social and economic reasons: full employment, Universal Service Obligation (USO), economic growth, industry bailout and so on. Although the first kind of motives are relevant in the decision to nationalize an economic activity, they do not help to draw a general understanding of the driving forces in the decision making process of SOEs: it belongs more in the realm of political history where economic rationality often fails to explain reality. Therefore, the rest of the chapter will focus on the last two kinds of objectives, the social and economic ones. R. Rees, in his book “Public Enterprise Economics” (1976) proposes a more detailed classification of these objectives. He starts defining in a clear manner a simplified ownership and control structure of an SOE:

“ (...) the statute or nationalization act (...), by vesting ownership of certain sets of industrial assets in a legal entity called a Board, establishes a public enterprise. The Board are given responsibility for the ‘day-to-day management’ of the enterprise, subject to directions (from a specified government minister) of general character, as to the exercise and performance of their functions in relations to matters appearing to the minister to affect the national interest”(Rees, 1976, p. 1).

In this passage the concept of “Board” is introduced, as the body responsible for the “day-to-day” decisions of the management of the SOE. Further, board’s decisions are taken in view of the “National interest”. Rees continues:

“the minister is responsible for formulating the social preference ordering which should apply to public enterprise decisions and informing decision-takers of it” (Rees, 1976, p. 2).

Therefore it is a public authority, be it a Minister, a Government, a Parliament or others, that is in charge of defining the term “National Interest” and assuring that this is the aim of every decision taken by the public firm. Then, Rees defines four aspects of what ministers have made be public enterprises’ decisions affecting the

“National interest”: economic efficiency, income distribution, macroeconomic effects and profitability. The first one can be defined in the form of managerial, technological and allocative efficiencies. However, it is possible to have managerial and technological efficiency together with allocative inefficiency. For instance, this happens when the output produced, although it is produced in the most effective manner, it is too much, or its price is too low. Thus it is inefficient as too much output is consumed, which means that the resource employed to produce the marginal units exceed the value that consumers derive from that good: allocative efficiency could be reached by employing these resources in the production of other, more desired, goods and services. The second objective is the redistribution of income. As taxes are means to redistribute wealth, the commercialization of the SOEs’ goods and services can be done in a way to channel subsidies and discounts to the unemployed, the sick, the old and so on. Third: a major concern of a government is macroeconomic policy. This can be translated in terms of unemployment, balance of payments, rate of inflation, growth of output and other macroeconomic variables. Finally, the only objective common to private enterprises is profitability, thus the “excess of its gross trading surplus over interest and depreciation provisions” (Rees, 1976, p. 4) which corresponds to the concept of profit to be redistributed to shareholders in a private enterprise.

The concept of profitability in SOEs

The concept of profitability for private firms differs from the SOEs’. The difference is found in the sources of capitals of an SOE. Namely, a public company is financed by (1) its own reserves, and (2) by the Exchequer, the Treasury. The Exchequer in turn collects capitals mainly from debt, taxation and other SOEs’ revenues, and redistributes them to fund SOEs, public services, subsidies and so on. The smaller the surplus of SOEs, the greater must be debt and taxation, and the smaller the spending. Therefore if the SOE in question is to be funded by the same public authority, in the end what really counts is its gross trading surplus and not how this surplus is divided into depreciation, profit and interest payments. Further, if the SOE fails to meet interest payments, the creditor of the public enterprise will not generally declare bankruptcy, and might be ready to capitalize its interest payments or even waive them or cover them with further loans (Rees, 1976). Although this is a theoretical reasoning, this behavior is found also in

empirical studies. In the paper sent by the Polish authority to the OECD “Roundtable on the application of Antitrust law to State-owned enterprises” (2009b), to the question “do SOE enjoy any special treatment which would grant them competitive advantages over private firms?” the author answers that SOEs’ *“enjoy special treatment regarding public levies (...) [t]he tax authority might not press troubled state-owned enterprises to pay taxes, to avoid forcing those enterprises into bankruptcy”* (Organization for Economic Co-operation and Development, 2009b, p. 3).

Another difference with private enterprises is that, because of the role itself of a public enterprise, profitability is usually limited or even avoided. In Rees’ words:

“(..) the objective of profit maximization has been explicitly rejected for public enterprises because in general they have monopoly power in at least some of the market they supply, and so profit maximization would result in policies which nationalization was expressly intended to avoid” (Rees, 1976, p. 5).

Therefore, the fact that most of the SOEs enjoy statutory monopoly on their core markets, push them to behave as a monopolist, rising then prices rather than minimizing costs in order to maximize profits.

To Summarize, the introduction of profitability among the objectives of an SOE is intended to restrict SOEs’ choices to “free riding” on its special privileges on its statutory monopolies and its favorable financial terms, thus taking it back to the efficiency path. However, profitability is not the only objective of an SOE, and often it conflicts with the above described objectives. The first type of conflict is with income distribution. Often the public firm must sell its goods and services at below-cost price to particular groups of customers. For instance to customers who have no income, or to customers to whom the cost of service provision is higher, but the service must be provided at a homogeneous price to the whole population (for example, by reducing the digital divide bringing cables to high mountain villages, as might be required by the Universal Service Obligation). This below cost service can be financed in different ways: raising the price for some customers (cross-subsidization), through additional loans from the Exchequer (thus the additional cost is redistributed to all the taxpayers), or by reducing the surplus that an SOE needs to generate, thus reducing profitability. Other types of conflicts exist between profitability and macroeconomic variables and economic efficiency. Full

employment and wage policies might well reduce profitability. The delay in raising good and service prices at a time when the cost of raw materials rises is also a source of loss.

Already at a theoretical level, SOEs often have “special” assigned missions and goals which might be incompatible with profit maximization.

Universal Service Obligation

A further objective often imposed to SOEs is the Universal Service Obligation (USO), defined as the obligation to serve all customers with the same quality of service and at the same price. Therefore the main features of USO are ubiquity of service, uniform pricing and minimum service-quality standards. Examples can be taken from the Postal Service, which is still almost everywhere in the hands of an SOE. The ubiquity of service consists in guaranteeing to any potential customer, whatever his/her location is within the national territory, the possibility to make use of the service. Furthermore, this service must be delivered at the same price to any customer. Therefore the location of the mailer and the receiver does not matter: whether the mailer lives in a small village on the mountains, or in the capital city, and the same for the receiver, the price of the service is the same, thus it is geographically averaged. This obligation has several implications for the SOE. First of all, in order to provide the service at the same price, the SOE is obliged to cross-subsidize the high-cost routes (the less requested routes) with the low-cost ones (which are more requested and thus more profitable). This means that the extra profit earned on the low-cost routes is used to “subsidize” the losses incurred providing the same price for the high-cost routes. A private company would instead differentiate prices, so as to be profitable in serving both types of routes. A second implication of the USO is that the SOE is required to serve all potential customers at any time, regardless of their actual request for the service. This is fundamental in the distinction between “network capacity cost” and “usage cost”. The usage cost is a variable cost incurred when a potential customer actually make use of the service, while the network capacity cost is a fixed cost incurred in establishing the maximum number of customers the firm is able to serve at once. In the case of an SOE with USO, there is no variable cost, as the firm is obliged to meet peak demand at any time (under universal access). Providing only the option to any potential customer of sending letters at any given

day to any given destination in the nation, the SOE must incur costs that do not vary with the true number of letters sent. Conversely, a private enterprise would have preferred to set a lower capacity level and eventually raise the prices to offset excess demand. Because of these particular features, the traditional approach to these kinds of enterprises must provide the SOE with a legal monopoly (Crew & Kleindorfer, 1998).

To conclude an USO aims at guaranteeing a “protection” against the exploitation of consumers in high costs areas and in high demanded routes. However, these consequences are critical when there are incentives for the SOE to expand the scope and scale of their services, and in the case of a multiproduct SOE. I will treat these considerations when dealing with the incentives for anticompetitive behavior of SOEs.

Nevertheless, these objectives are general and abstract, and the actual decision making of an SOE may differ from these guidelines. It should be recognized that, similarly to private enterprises, the SOE is in a situation of delegated choice, and the actual agents of delegation might be able to impose other kind of incentives and objectives.

2.2.2 MANAGERIAL OBJECTIVES: THE PRINCIPAL-AGENT PROBLEM IN SOEs

When there is a clear distinction in the ownership and control of an enterprise, then choices must be delegated. At this point, the principal-agent problem may arise in both private and in public entities: namely the problem of ensuring that the decisions of the managers are consistent with the preference ordering of the “owners” in whose interest they are being taken.

SOEs’ managers have often considerable discretion to pursue their own objectives, even more than private enterprise’s managers (Sappington & Sidak, 2003). This is mainly because: first, public enterprises are less subject to the disciplines of capital markets and second, SOEs are not subject to takeover threats.

In order to make sure that the principal-public authority is able to restrain the freedom of the agents-Board, a “system of control” is needed. A system of control

can be implemented as a decentralized system where managers are given only general guidelines to follow, a system where decision-making is duplicated and every choice made by the board must be submitted and overseen by the principal. According to the different system implemented, different costs may arise. In a “duplication of decision making” system, although a greater flow of information is generated, there are longer implementation delays and a greater absorption of resources by the central authority (Rees, 1976). Instead, in a decentralized system the cost of monitoring by the public authority is less burdensome. However, in this type of system managers are less monitored: if the choices made by managers do not meet the principal’s ones’, then this situation might be more costly and less efficient and can represent a cost for society.

Therefore, in a situation with high monitoring costs and with asymmetry of information between the principals and the agents, the latter might follow a scheme different from the one desired by the public authority. The next question to answer is then: what do bureaucrats (managers of the SOE) seek to maximize?

There is a common agreement between scholars on assuming that managers of SOEs “have considerable interest in expanding the scale and scope of their activities” (Sappington & Sidak, 2003, p. 500)². In “Economics of the public sector” (Stiglitz, 1988) the author explains that SOEs’ managers are concerned with “their salary, the perquisite of office, public reputation, power, patronage”, all of which are related directly to the “size of their agency”. In order to do this, bureaucrats compete among each other for funds provided by the Exchequer, so that “bureaucratic competition replaces market competition” (Stiglitz, 1988, p. 205). However this is only a surrogate of competition as often SOEs provide different goods and services, on which they have a statutory monopoly. Lott (1990) describes other reasons why SOEs’ managers would maximize output: the larger the output, the greater the power to contract for funds, the higher the salaries, the greater the prestige of being associated with a larger enterprise, increase the opportunity to contract with the agency after retirement (Lott, 1990, p. 239).

2.2.3 INCENTIVE STRUCTURE

Summarizing the above-mentioned findings: managers of an SOE do not seek to maximize profits (and do not seek to minimize costs), but they have a “mixed”

² same conclusions are reported by Lott (1990), Rees (1976), Niskanen (1971), Stiglitz (1988)

incentive structure, seeking to maximize both profits and output. This conclusion is supported by two kinds of arguments. The first one was analyzed in the section “The formal Objectives”: it is the public authority itself that, imposing to the SOE goals other than only profit maximization, generates a conflict of interests with profitability itself. Therefore, we don’t have to assume the presence of high monitoring costs to justify the “deviation” from profitability as the only objective of a company. The second explanation was described in the section “Managerial objectives: Principal-agent problem in SOEs” where managers, found in a situation of making decisions on behalf of the principal-public authority, will seek to act in their own interest, thus maximizing the size of their agency.

In conclusion, managers of an SOE act as if they sought to maximize a combination of profits and output. Introducing the concept of Revenues as a good proxy for output, it is possible to describe a simple incentive function of a bureaucrat as a weighted average of profits and revenues:

$$I_{(Q)} = w[Revenues] + (w - 1)[Profits]$$

The Revenues and profits generated by the SOE are averaged using a w parameter, which ranges from 0 to 1. If we impose $w = 0$, then the incentive structure turns to the normal profit function of a private firm. A more detailed formulation:

$$I_{(Q)} = w \left[\sum_{i=1}^n p_i Q_{i(p)} \right] + (1 - w) \left[\sum_{i=1}^n p_i Q_{i(p)} - C_{(Q)} \right]$$

Equation 1 – SOE’s incentive structure

where Q_i and p_i are respectively the quantity and the price of the SOE’s goods and services. The summation is introduced for a multiproduct SOE, whose total revenue is the sum of the products of each quantity and the price of each product sold. This formula is proposed in “Competition law for State-owned enterprises” by Sappington and Sidak (2003). However, the same authors propose a more detailed formulation of SOE managers’ incentive formula including the influences that other parties might have on the managers’ decisions: in “Incentives for anticompetitive behavior by public enterprises” (Sappington & Sidak, 2003b) the influences of taxpayers, who might affect the decisions of an SOE through their votes, consumers, who want to increase their surplus, and competitors, who might be able to secure their influence through lobbying are added to Equation 1.

Thus Equation 1 is not only a simplification, and many more factors can be added, other incentive constraints have been proposed by scholars. An interesting one was proposed by Wiens (1978). The basic reasoning behind Wiens' formula is the same as Sappington's and Sidak's, namely that SOE's managers value revenues as well as profits. However, Wiens goes further and introduces a direct relationship with competitors.

$$I_{(Q)} = D_{(Q)}q - C_{(q)} + \beta(D_{(Q)}Q)$$

Equation 2 – Wiens formula

Instead of a w parameter, Wiens introduces a variable β , which does not multiply the single SOE's revenues, but the total revenues in the industry $D_{(Q)}Q$. The β parameter is defined as a percentage of the total industry revenue. This formula conceives a more "altruistic" manager, who takes into consideration not only the size of its agency, but also the output obtained by competitor(s).

2.3 ANTICOMPETITIVE PRACTICES

Once an SOE and its differences with private profit-maximizing firms were described we now turn to discuss the potential effects of these differences in the realm of competition theory. The aim of this section is to understand the main anticompetitive practices that an SOE might undertake. It will be assumed the case of an SOE operating mainly in a "reserved market" (where it enjoys a legal monopoly) but that enters into competition with profit-maximizing firms in "non-reserved markets".

For anticompetitive practices are meant practices undertaken with exclusionary aims, as defined by the European Commission's Guidance (European Commission, 2009):

"a situation where effective access of actual or potential competitors to supplies or markets is hampered or eliminated as a result of the conduct of the dominant undertaking whereby the dominant undertaking is likely to be in a position to profitably increase prices to the detriment of consumers" (European Commission, 2009, p. par. 19).

In order to identify potential anticompetitive practices, both the firm's incentives to undertake such strategies and the ability to carry them out must be identified (Lang & Renda, 2009).

This section takes two classes of such practices into consideration: “predatory pricing” and “raising rivals’ costs”. The predatory pricing strategy will be analyzed more in depth, first the incentives of an SOE are described using an industrial-based model, and then the ability of an SOE is considered. The second set of anticompetitive practices is “raising rivals’ costs” strategies, also called non-price predation. Of these two strategies will be described: margin squeeze and refusal to deal.

2.3.1 PREDATORY PRICING

Predatory pricing is an “exclusionary practice”, namely a practice carried out by an incumbent with the aim to exclude existing competitors from the market and to deter the entry of potential rivals. This practice falls under the allegation of “abuse of dominant position” in the EU (article 82 of the EC Treaty) and “monopolization” in the US (section 2, Sherman Antitrust Act).

Predatory pricing, as well as other exclusionary practices, is difficult to distinguish from “genuine competition”. An efficient incumbent has all the rights to set the price of his/her goods and services below the cost of the rival, or at such a level that the competitor cannot replicate the same price. However, the same behavior can be taken on by a non-efficient firm, exploiting the lack of information available to competitors and entrants. Therefore, it is difficult to distinguish the two kinds of competition, and there is the risk for antitrust authorities incurring a “type 1 error”, namely to punish competitive firms for setting too low prices even if they were not undertaking predatory pricing, inducing firms to raise their prices to avoid punishments. A rule of reason is applied to all cases on predatory pricing and different features are looked in each case in order to recognize the predatory intent in the pricing of the “predator”.

There are three main features of predatory pricing:

- 1) The incumbent predator sets the price with the clear intent to exclude the competitor(s) from the market. For “clear intent” we meant that the predator will not set the price P^* , the optimal price for profit maximization, but he/she will set a lower price P' , which will make the incumbent carry losses for the period of predation. In the Guidelines on the Commission’s enforcement of Article 82 of the EC Treaty this

behavior is referred to “sacrifice”, indicating the sacrifice of profits by the incumbent (European Commission, 2009).

- 2) The incumbent firm must have a dominant position in the market so that it is able to increase the price (setting prices near or at monopoly prices) in the long run. Namely, a firm will price discriminate, and thus will incur losses for a certain period, with the clear aim of excluding the competitor from the market to be able to set monopoly price thereafter. In order to do so, it must have a dominant position in the market.
- 3) Once the predation has been undertaken by the incumbent and the prey has been excluded from the market, the dominant firm still faces the threats of potential entrants. This last point convinced scholars that predatory pricing is actually impossible to be empirically found: any rational firm will never engage in expensive predatory behavior if there are other competitors ready to enter the market. However, as argued in the “reputation model”, if the incumbent can credibly commit himself/herself to the predation, then it will be possible to create a reputation of predator, thus being able to limit entry in the market (Motta, 2004).

Although these elements are to be applied to both private and public enterprises, it is argued that an SOE might have stronger incentives and ability to carry out predatory price strategies. Predation has been widely criticized, to the point that it was believed that it would never be observed, as no rational firm would undertake a strategy which generates only losses for the undertaker (see discussion in the later section “theoretical approach”). Following this line, Lott assumed that “while predation by private enterprises is implausible, predation by public enterprise is not” (1999). While the discussion on whether private profit-maximizing firms would undertake predatory price strategies is not in the interest of this research, the fact that public enterprises, although less concerned with generating profit, have incentives in pursuing predatory pricing, and even more than private firms, is the main issue of the next two sections. Anticipating, it will be shown that SOEs are in the conditions to likely incur predation, when faced with competition in “secondary markets”. We assume that an SOE enjoys a legal monopoly on its main market (called “Reserved market”), while it might still be likely to expand into competitive markets. In the Guidelines of the European Commission on the application of

Article 82, it is reported the specific case of a dominant undertaking that may pursue predatory practices on secondary markets on which they are not dominant (European Commission, 2009, p. 16 note (2)): “the Commission will be more likely to find such an abuse in sectors where activities are protected by a legal monopoly”.

Referring to the theory of harm, the following two sections will be analyze first the incentives for SOEs to price anti-competitively, and then their expanded ability to do so.

Industrial Organization approach

This section aims at describing the incentive for an SOE to undertake predatory pricing. Two firms will be analyzed separately: a private and an SOE, which sets quantity and price using simple industrial organization theory. Then, the output produced and the prices set will be compared.

The two firms will differ for their respective “incentive functions”, namely the function that the managers are expected to maximize. While for the private firm’s managers are expected to maximize profits, the SOE’s managers will maximize the incentive function obtained in the previous section (Equation 1), which was derived from the literature previously analyzed.

Both firms face a linear demand function and a cost function

$$P_i = a - bQ$$

Equation 3 – inverse demand function

$$C_i = cQ$$

Equation 4 – cost function

Where P is the price, Q is the quantity produced and c is the cost per unit. Below it are derived the optimal price and quantity for both firms.

Firm 1: private firm

The private firm’s managers’ incentive function is a simple profit function:

$$\pi_1 = P_1q_1 - cq_1$$

Equation 5 – profit function of a private firm

Managers are expected to maximize Equation 2, thus taking the first partial derivative with respect to q_i and then setting the result to zero, it is possible to first derive the quantity and then the price set by a private firm:

$$q_1 = \frac{a - c}{2b}$$

$$P_1 = \frac{a + c}{2}$$

Firm 2: the SOE

SOE's managers are expected to maximize Equation 1 derived in the previous section:

$$I_{(Q)} = w[(a - bq_2)q_2] + (1 - w)[(a - bq_2)q_2 - cq_2]$$

Then the price and quantity set by an SOE will be:

$$q_2 = \frac{a - c + wc}{2b}$$

$$P_2 = \frac{a + c - wc}{2}$$

Results:

We then compare the two prices and output levels set by a private firm and by an SOE.

	SOE	Relationships	Private firm
Output	$q_2 = \frac{a - c + wc}{2b}$	>	$q_1 = \frac{a - c}{2b}$
Price	$P_2 = \frac{a + c - wc}{2}$	<	$P_1 = \frac{a + c}{2}$

Table 1 – comparison between prices and quantities set by a monopolistic SOE and a monopolistic private firm

In Table 1 are reported the resulted prices and quantities set by a monopolist SOE and a monopolist private firm. By comparing the results it is possible to see that the quantity set by the SOE q_2 is larger than the quantity set by the private firm q_1 by an amount equal to wc , namely the product between the unit cost c of producing the SOE's service and the w parameter. Therefore, the greater is the SOE's managers' focus on revenues rather than on profits, the greater is the output set. Regarding prices, the price set by the SOE P_2 is smaller than the one set by the private firm P_1 , again by an amount equal to wc . Therefore the greater

the SOE's focus on revenues rather than on profits, the greater the tendency to set a lower price.

Therefore, through this simple model it is evident that the reduced focus on profit of the SOE's managers will generate an incentive to set higher output and lower prices. This can be explained with managers, due to a lower focus on profits, taking less into consideration the "extra" cost derived from greater output production.

The main drawback of this model is that it does not take into account the competitive interaction between the two firms. More complex industrial-based models can be drawn setting various constraint and features to the firms, such as different unit costs, increase the number of periods, introducing price or output competition and so on. These models generally are "mixed duopoly" models³.

Theoretical approach

The Guidelines on the enforcement of Article 82 expressly refer to the expanded ability of "legal monopoly" in pursuing predatory pricing in secondary markets:

"[w]hile the dominant undertaking does not need to engage in predatory conduct to protect its dominant position in the market protected by legal monopoly, it may use the profits gained in the monopoly market to cross-subsidize its activities in another market and thereby threaten to eliminate effective competition in that other market", (European Commission, 2009, p. 16).

The above-mentioned passage refers the strategy of cross-subsidizing, so that an SOE can exploit the advantage of having a legal monopoly over a certain sector or activity.

In accordance to the theory of harm, this section will describe the actual ability of an SOE to pursue exclusionary practices. This time a theoretical approach will be taken: an analysis of the main theories of predatory pricing is carried out, applying them to the SOE's particular features.

There are two main economic theories explaining predatory pricing. One is the "Deep pocket theory", which arose much interest as much as criticism. In particular

³ For the seek of simplicity these models will be not reported here; among the several works of scholars example of mixed duopoly models are (Lott, Predation by public enterprises, 1990), (Wiens, 1978), (Matsumura & Matsushina, 2003).

the criticism raised by McGee (1958)⁴ will be described and how this is not relevant any more when the incentive structure of an SOE is introduced. The second theory developed on game theory's model on reputation.

Deep pocket theory:

Predatory pricing makes by definition both the predator and the prey incur losses for the period of predation. However, according to the Deep pocket theory, the small competitor has limited resources ("small pocket") compared to the predator and will not sustain the losses, while the predator has larger resources, so that he/she will be able to survive.

McGee's criticism is summarized and commented in the following four points:

- (1) McGee argues that, since the firm with more resources (deeper pockets) is larger than the prey, it will incur more losses, thus overall both firms have relatively the same share of losses. However, there are two main counter arguments. First, this criticism does not apply to SOEs as these last ones have an enlarged capability to carry the losses for a longer time than any private firm. First of all, let's assume that an SOE enjoys a statutory monopoly in a different market, or in part of the market in which it is acting as a predator. This privilege may enable the SOE to set higher prices in the "reserved market" (the market in which the SOE has the monopoly power) and thus "finance" the losses incurred through predation. This process is known as "cross subsidization", and it is defined as that process by which the revenues generated by selling a certain product are smaller than the incremental cost⁵ of the product, but still the firm is able to cover the losses with the revenues generated from other commercial activities (Faulhaber, 1975). Therefore, the overall financial condition of the predator may be actually profitable, even if it is pricing below cost in the non-reserved market. Furthermore, through the same process of cross-subsidization, an SOE may be able to lower its incremental cost of production in the non-reserved market. It is able to do so by overinvesting in the reserved market so as to cover some of the costs it has in

⁴ For a summary of McGee's criticism on deep pocket theory see Motta (2004).

⁵ Incremental cost (IC) is the increase in the firm's total costs when it expands the production of a particular product, ceteris paribus. The IC of a product x is computed by the difference between current total costs and total costs where the firm was not producing the product x (Sappington & Sidak, 2003, p. 488).

the non-reserved market⁶. A second counter argument takes into consideration the ability of a public (as well as a private) firm to price discriminately, thus enabling the predator to lower the price for some goods and raising the price of others (Motta, 2004). It can be further argued that a public enterprise might have a greater ability than private firms to price discriminately: one of the formal objectives of an SOE is income distribution, and price discrimination is one means to reach this goal. For instance, in most public universities the system of fees is price discriminating, based on the income of the student's family. Lastly, a public service might have access to sensible information such as the income of its taxpayers. However, price discrimination generates the threat of potential entrants (Lott, 1990, p. 246) Raising prices for some customers might encourage firms to compete by offering lower prices for these high-end groups. This would not only affect the SOE that will reduce its output, but will also cut the SOE's reserves for cross-subsidizing. Nevertheless, it will be later demonstrated in the reputation model how an SOE can limit entry.

- (2) Further, McGee argues that the fact that the predator has access to larger resources than the prey is an assumption that should be demonstrated rather than accepted. In other words, McGee states that the smaller firm might have deep pockets too. For instance, if the competitor is able to convince investors that the predator has limited resources, the former might be able to fight predation in a way to exclude the same predator from the market. It can be counter argued that an SOE enjoys a chartered access to capitals compared to a private firm, thus actually reappraising deep pocket theory. First of all, as previously discussed, an SOE might be exempt from taxation or might have a privileged treatment from the tax authority. Further, SOEs may enjoy other immunities that facilitate the recoupment of losses incurred through predation: in Sappington and Sidak (Sappington & Sidak, 2003, p. 516) it is stated that often an SOE "has no obligation to compensate its investors, the American taxpayers". Therefore, proved that SOEs enjoy a lower cost of capital, they have more resources available for predation than any other private enterprise.
- (3) Assuming a rational predator, it will not undertake a predatory pricing strategy in order to exclude a competitor if other cheaper means are available to reach

⁶ This process is proposed by Sappington, Sidak (2003, p. 494) and applied to the analysis of Deutsche Post AG case (Pg.494).

the same goal. McGee argues that Merger and Acquisition might be a cheaper means to get rid of competitors. However, first of all, it should be recalled that an SOE does not value cost minimization as a private firm, thus if predatory pricing is an efficient exclusionary means, there is no incentive to undertake a more direct acquisition of competitors. Further, Motta (2004) argues that M&A is often a device to get rid of the competitor's assets from the market and it is often undertaken after a period of predation in order to reduce the cost to acquire the competitor. Moreover Lott (1999) argues that, as antitrust laws are not applied in a consistent way to public and private firms, and the former may even be exempt from these laws, then SOE may have a greater incentive to undertake a merger or acquisition after the successful predation.

- (4) Recalling the threat of potential entry, this can be enhanced by the fact that once a competitor has been driven out of the market, its assets are not eliminated and might be available to new entry competitors. These assets are then called "sleeping assets" (Motta, 2004). However, the fact that predation has occurred already once, may discourage potential entrants from behaving as predator. A formal explanation of this behavior is well provided in the Reputation model theory.

Reputation model:

Reputation models are based on the introduction of asymmetry of information and uncertainty in the market. Assuming a world with full information, all firms possess the technology, the financial resources available to each other and the preferences of consumers, a rational incumbent would never have a predatory behavior (Motta, 2004): either a potential competitor would never enter, knowing that the incumbent is "strong"⁷, or the incumbent would never fight, as it will be known that the firm will be able to sustain predation.

Let's then introduce some sources of uncertainty: first let's distinguish a "strong" from a "weak" incumbent; a second source of uncertainty is the type of

⁷ A "strong" incumbent is one that has enough resources and that it is efficient enough to have lower costs than the entrants, thus being able to engage in predatory pricing. A "weak" incumbent is one that has the same costs (or even lower) than potential entrants.

repeated game⁸, namely if the game is repeated a finite number of times, or if the game is infinitely repeated (or better, the end of the game is not know, thus assumed to be infinite). If none of these pieces of information is available, the predatory behavior of the incumbent might have an impact on future competitors as well. Namely, a firm that has engaged successfully in predatory pricing might signal to all future entrants that it will do the same, every time the game is played. Thus, a “reputation” of predation develops. If the incumbent is known to be strong, then potential competitors will refrain from entering. Let’s analyze all the possible variations of the game, gradually releasing the sources of certainty.

	WEAK	STRONG
FINITE	Accommodate (1)	Fight (2)
INFINITE	Fight (3)	Fight (2)

Table 2 – assumptions and outcomes: weak/strong incumbent, finite/infinite game.

In case (1) the game is played a finite number of times, and it is known that the incumbent is weak. This case is better known as the “Selten’s paradox”⁹. Starting from the last period, there is no means to engage in predatory pricing as the predator will incur losses and would have no reasons to create a reputation if the game ends. If the entrant is accommodated in the last period, also in the previous ones there will be no means to fight entry, thus predatory pricing will never be observed. In case (2), if it is known that the incumbent is strong, but it is uncertain when the game will end, potential competitors will not enter as there is a credible threat of predatory pricing. In case (3), it is uncertain whether the incumbent is weak or strong and it is not known when the game will end. The result will be that the incumbent, even if weak, will be encouraged to fight entry, thus creating a credible threat of predation. The potential entrant will believe that the incumbent firm is a strong one and will refrain from entering the market. A reputation is created, exploiting the fact that potential competitors do not have information about the actual ability of the incumbent to sustain predatory pricing (Motta, 2004).

⁸ The game consists in this procedure 1) the entrant decides whether to enter the market or not, then 2) if it enters, the incumbent decide whether to fight entry (predatory pricing) or to accommodate entry.

⁹ Selten’s Paradox shows that when the game is played finitely many times, then predation would never be observed. Selten assumes that the incumbent is weak and that there is full information. For further analyses on Selten’s chain-store paradox see, (Selten, 1978), for a summary on Selten’s paradox see, (Motta, 2004, p. 422)

Applying the theory to SOEs, we can assume an infinitely repeated game with imperfect information. It can be argued that an SOE can credibly commit to predatory behavior more than a private firm (Sappington & Sidak, 2003) (Lott, 1990). As previously showed, SOE's managers maximize a weighted average of profit and revenues. Thus a public firm will not even have the need to raise prices above the predatory level once the prey succumbed, as it values the extra market shares obtained. If the public enterprise raises the prices thereafter, it will lose part of the market. Therefore, on the one hand, the SOE has already engaged in predatory pricing, and might have demonstrated its capability to carry on losses from predation without raising prices in the market. On the other hand, if the predator has not yet engaged in predatory pricing, it might still be a credible threat to future entrants: the SOE, pursuing objectives other than profit maximization, is incentivized to price in an aggressive manner. Therefore, in both cases, whether the SOE has engaged already in predation or not, it does have a reputation of predation, thus deterring the entry of new competitors in the market.

2.3.2 RAISING RIVALS' COSTS

In this are discussed a selection of strategies which fall under the classification of "raising rivals' costs" strategies: a variety of cost-rising strategies which aim at disadvantaging rivals or driving them out of the market without the need to set low prices¹⁰.

Rising rival's costs strategies, compared to predatory price, present several advantages: (1) even if rising competitors' costs might not have the desired exclusionary effect, still these strategies can represent a source of increased profitability for the predator as it is better to compete against a high-cost firm rather than a low-cost one; (2) the effects of such strategies are quick and visible as a high-cost firm immediately take decisions on lowering output, raising prices or disinvesting, while predatory pricing requires a consistent sacrifice of profits in the short run for only a probability of being able to set monopoly price in the long-run; (3) lastly, the "deep pocket" theory is not necessary for undertaking such

¹⁰ Rising rivals' costs strategy might still be considered as "pricing strategies", as some of them (e.g. margin squeeze) involve the setting of prices in a way t disadvantage competitors. However, the difference with predatory pricing is that they not target only the final price to end-users, instead they target especially the costs that competitors faces. In the case of margin squeeze strategy, a component of predatory pricing might still be involved (see below) but it is often carried out in combination with a cost rising strategy.

strategies as they might not even require the predator to incur losses. All these elements combined make raising rival's costs strategies more credible and "efficient" than predatory pricing (Salop & Scheffman, 1983).

However, raising rivals' costs is not necessarily an anticompetitive behavior. Once again, different elements should be met in order to identify such practices as exclusionary.

Generalizing, rising rivals' costs strategy has the primary effect of shifting competitors' supply curves or reaction function back, as to make them selling less at each price, or to make competitors' correcting their prices upward, reducing output. However, these strategies will generally increase the predator's costs too, although some of them can be more cost-effective than others (a legal action to protect monopoly and disadvantaging competitors require a lower compared to the strategy of predatory product proliferation). Overall, non-price exclusionary practices are profitable when the predator can raise market prices, given the same output, by more than the increase in costs (Scheffman & Higgins, 2003)¹¹.

The discussion up to now is valid both for the private and public sectors. However, SOEs have stronger incentives and ability in rising rivals' costs than profit-maximizing firms (Sappington & Sidak, 2003).

Following the previous line of reasoning, SOE's reduced focus on profits and preference for expansion of its scale of operations, will makes it carrying out activities to reduce the market shares of competitors. Thus, an SOE is incentivized in raising rivals' costs to induce competitors to reduce their output. Further, it has the ability to do so, for instance it might lobby key policy makers to erect entry barriers, impose statutory prohibitions on entry, restrict rivals' access to essential inputs etc.

Although there are many strategies fall under the set of "raising rivals' costs strategies", there are few of them which more often arise in the presence of SOEs: margin squeeze and refusal to deal.

¹¹ For formal analyses on strategies by which firms could disadvantage rivals by raising their costs, see (Salop & Scheffman, 1983).

Margin Squeeze¹²

Margin Squeeze strategy can be found in Network Industries where two markets exist: an upstream market, in which an SOE-monopolist owns the “critical input”, i.e. an input the access to which is essential for the operating in the downstream market, and the latter market in which the SOE competes with other firms.

An example is that of a local telephone operator (upstream monopolist), which owns and fully controls the local networks utilized for calls within a certain territory (critical input). The Telephone operator faces competition by one or more competitors in the market for long-distance calls (downstream market). The competitors, in order to provide the service, they need to have access to the local network, in order to then operate outside the network in competition with the SOE. In Figure 1 is described the market structure: the circle represents the local network and the dotted lines indicate that the companies that compete in the long distance market need access the local network; q_0, q_1, q_2 indicate respectively the demand for local calls, and the demands for long-distance calls faced by the monopolists Telephone Operator and the competitors.

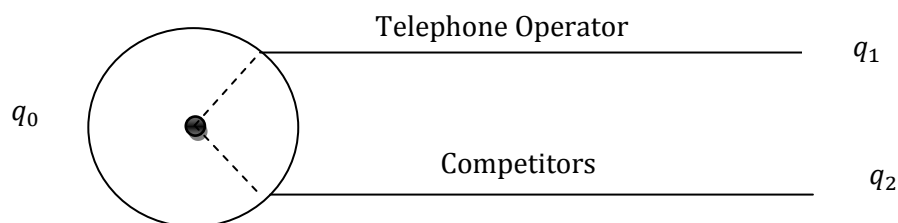


Figure 1 – long distance competition cum local exchanges bottleneck. Source Specificata fonte non valida.

In this setting has been theorized the incentives of the upstream monopolist to “squeeze” its rivals’ profit margin raising the price for the network’s access, thus de facto raising rivals’ costs.

However, there are conditions to be met in order to make this strategy actually profitable for the upstream monopolist. The effects of a raising of downstream rivals’ costs are two: first, given that the competitors face less profits, they must higher prices or lower their output, which in turn will raise the monopolist’s market share and profits; a second effect is the lower demand for the input, given a

¹² Margin squeeze exclusionary practice is discussed both in this chapter and in chapter III, when discussing the case of an incumbent Vertical Integrated Producer in a post-liberalized market. In this section an introduction on the practice is delivered for the seek of understanding, a more throughout discussion is postponed to the next chapter.

decrease in downstream output, and therefore lowering monopolist's profits from access market. Therefore the monopolist should balance these two opposite effects when deciding whether to undertake exclusionary actions¹³ (Sibley & Weisman, 1998).

Up to now the analysis considered both private and public monopolist. In the specific case of an state-owned enterprise, there are two elements which might concern the Competition Authority: first, often SOEs are the sole owners of critical inputs, such as network infrastructures or natural resources; a second reason is that their reduced focus on profits and they preference for expanded scale of operation might generate stronger incentives in undertaking margin squeeze. According to the first argument, it has been previously shown how SOEs are often found in correspondence of natural monopolies. Natural monopolies arise in the presence of large economies of scale, which creates insurmountable barriers to entry. Therefore in such markets there is high probability in founding a monopoly. SOEs then take place in order to avoid the setting of too high price; however these are also the cases when the monopolist is found in undertaking margin squeeze. A second reason why there should be greater concerns for SOEs to undertake margin squeeze is that they have a reduced focus on profits. As has been previously stated, one of the counter-arguments of margin squeeze is that will reduce the monopolist's profits in the access market, thus if this effect is greater than the increase in profits from the exclusionary behavior. However, if SOEs value more the expansion into the downstream market than the loss incurred in doing so, then it they are more incentivized than profit maximizing firms in undertaking margin squeeze (Sappington & Sidak, 2003).

Once has been analyzed the incentives and the ability of an SOE in carrying out margin squeeze strategy, the next focus is on the instruments that can be used to prevent and/or sanction such abuses. In this case, the main instrument to be used is the national and EC competition law¹⁴.

On the European level, although the precise practice of margin squeeze is not mentioned in Article 82 EC, the Court of First Instance has confirmed that

¹³ For a formal model on the incentives of the monopolists see, (Sibley & Weisman, 1998).

¹⁴ In Chapter III will be analyzed the approach of sector-specific regulation taken by National Regulatory Authorities (NRA) in a post-liberalized market.

dominant undertakings which engage in such conduct may be guilty of an abuse of dominant position (Geradin & O'Donoghue, 2005).

The practice of margin squeeze is related with some of the previous mentioned strategies, also contained in the Article 82:

- Excessive pricing
- Predatory pricing
- Cross subsidies

Excessive pricing refers to an abuse of dominant position under Article 82 (a), and is manifested for instance in the case the Telephone Operator set a too high access price to the network for competitors, thus rising their costs. However, the strategy of margin squeeze presents some differences with excessive pricing. First of all, margin squeeze is related to Article 82(b), as it is more an exclusionary abuse, which effect is to limit the offers to consumers (once the competitors are driven out of the market), while excessive pricing is an “exploitative” abuse. Further, while to assess excessive pricing it is taken as benchmark the cost of the monopolist, in a margin squeeze case are taken as benchmark the costs the relevant price and profit margin of the downstream market, thus considering also the final price to end-users (Geradin & O'Donoghue, 2005). Moreover the practice of excessive pricing is usually not carried out by an SOE, as its pricing is often strictly regulated and controlled by the legislative authorities.

The second strategy is predatory pricing: another way to “squeeze” the profit margin of the competitors is to lower the price in the downstream market. This practice is more likely to be used by an SOE (as has been discussed above). However, margin squeeze differ from predatory pricing from the existence of an upstream market. In this last one, an SOE might be able to exploit its dominant position subsidizing the loss incurred undertaking a predatory pricing strategy in the downstream market.

The third strategy is fundamental in matching the other two abusive practices such as to enabling the funding of downstream losses (incurred by predatory pricing) with a profitable upstream market (where it might be charged excessive prices). In this case the excessive pricing of downstream competitors, in relation to pricing

below costs to consumers, it might be motivated also by redistributive objective of the SOE.

In conclusion, while margin squeeze differ both from the strategies of excessive pricing and predatory pricing, the combination of the two can be carried out in a way to rend the margin squeeze strategy more difficult to reveal. Further, it is possible to argue that an SOE take more into consideration the downstream market, in order to comply with its Universal Service Obligation and in order to expand its output. Therefore, it might have even greater incentives in hinder competition brought about entrants in the market, although this behavior will eventually lower the number of users who can access the infrastructure rather than increasing it overall.

Refusal to deal

The anti-competitive strategy of refusal to deal can take on different forms: foreclosure on access to a network or an essential facility, refusal to supply an essential input, etc. In general, the antitrust authority is concerned when a dominant firm owns an “essential facility” (previously called “critical input”) and it exercises its property rights on the essential facility as to exclude rivals from the market or to disadvantage them, raising their costs. This strategy is similar to the previous margin squeeze as it entails a dominant firm owning a critical input, and its exclusionary behavior exercising its property rights on the essential facility it owns.

One example is the local telephone monopoly which owns local lines and refuses to supply the access to its local loop to firms in the long-distance calls market.

The allegation of refusal to deal raises two main concerns. The first one consists in determining whether a facility is “essential” or not. Namely, if entrants and competitors of the dominant firm actually require the access to the dominant firm’s facility or they are able to stay in the market using other facilities or building their own. A second concern is that, forcing a firm to supply or to allow access to capital developed through investments might discourage firms from investing in essential inputs in the future (Motta, 2004). This second concern is crucial. Often firms which own essential facilities such as airport’s slots or local loops had received the right to use these from their governments at the time when they were SOEs. Once the market is de-regulated (privatized and/or liberalized) then the dominant firm

finds itself favored in the competition as it has inherited the essential facility, thus the incentives to undertake foreclosure strategies are greater. A more thorough analysis is carried out in chapter 3 in relation to de-regulation strategies and liberalized markets.

2.4 STATE OWNERSHIP: A FIRST CONCLUSION

State-owned enterprises kept monopolies in the main sectors of the Western economies for a long time, especially in the telecommunications, postal service, energy and transport industries. They were utilized by the States as means to directly control the outcomes of these sectors for several different purposes: SOEs were used in those European countries which lagged behind in the industrial revolution to catch up with the most industrialized nations; as a means to recover after the economic crisis of 1929 (and other more recent crises¹⁵); to “correct” the market failures that might have arisen under free competition.

Paragraph 2.2 analyzed the objectives of an SOE considering both its formal higher ends other than profitability that have been assigned to it, and its delegated choice context, thus where formal objectives may be overcome by managerial objectives.

Goals such as USO are incompatible with profitability and free competition, thus the SOE has been granted a privileged position in the market: it is granted a legal monopoly, privileged access to financing and protection from takeover threats and other factors which restrain the freedom of private enterprises, the use of means such as cross-subsidization to guarantee uniform prices.

It can be stated that the existence of SOEs is often in conflict with the existence of competition laws, and indeed state-owned companies have been often waived from the competition authority’s control.

However, when SOEs are not clearly limited to precise objectives, to the production of certain goods and services, and their action in the monopolistic market is limited, and when they enter into contact with other markets open to free competition, then the same laws should be applied to private companies as well to state-owned ones. In fact, in these cases SOEs might exploit their privileged

¹⁵ In the ongoing financial crisis (2008) states intervened deeply in the economy, especially in the credit market.

position to pursue practices which can go beyond the genuine competition and undertake anti-competitive practices with exclusionary aims.

Two main sets of such practices introduced in this chapter are predatory pricing and raising rivals' costs strategies. Paragraph 2.3 argued that:

- (1) when an SOE competes with a private profit-maximizing company, the effect is that the quantity produced increases and the price lowers, *de facto* underestimating the costs incurred in this strategy and potentially foreclosing access to and activity in the market by a more efficient player(s);
- (2) an SOE has an expanded ability to price with predatory aims, derived by its privileged position in the reserved market;
- (3) an SOE has the ability to undertake other non-price predatory practices which raise the costs of existing rivals to disadvantage and exclude competitors from the market and to restraint entry.

These practices are welfare detrimental because they damage competition and consumers. Three types of inefficiency arise: allocative, productive and dynamic inefficiency. When predatory pricing is undertaken by an SOE, the price of a good or service is underestimated, thus too much service is consumed. In other words, the cost of producing one unit exceeds the value that customers place on it, as most of them are ready to pay more. Society would benefit from reduced production of that good and if the resources saved were allocated for more desired ends, thus there is an inefficient allocation of resources. The productive inefficiency arises when the winner of competition is not the most efficient. Lastly, predatory practices cause dynamic inefficiency. When predation is successful, the profit of competitors is reduced, moving resources from the production of that good or service to others. In turn, also the effort of Research and development might be moved from the market where the SOE, acts in other markets, thus foreclosing on potential development of that market.

In lieu of these conclusions, legislative action should be taken (and it has been taken indeed) in order to avoid conflicts between the existence of SOEs and competition laws, both critical to the supply of vulnerable public services and to regulate free competition.

3. PRIVATIZATION AND LIBERALIZATION

3.1 PRIVATIZATION

3.1.1 HOW MUCH STATE AND HOW MUCH MARKET

For many years, major industries such as telecommunications, postal services, transport and energy were monopolized by SOEs. These state monopolies were considered strategically important and their existence was justified on several grounds: Chapter 2 dealt with the concepts of market failure, natural monopoly and the obligation to achieve a “public service”. Starting from the mid 1970s through the 1990s, these concepts came under strong criticism, up to the point where the term and concept of “nationalization”, i.e. the process by which SOEs are created, has been assuming a negative value (Toninelli, 2000, p. 3). In those years, under Regan and Thatcher, the neoliberal question “how much state and how much market” was introduced, which implies that there is too much state and not enough market (Toninelli, 2000).

The decline of SOEs set the pace for the phenomenon of “privatization”. This word made its first appearance in 1983, although the concept was not new: policies designed to stimulate the substitution of private by public ownership had been in place before the 1980s. However, the “enthusiasm”, the intensity and the variety of methods by which privatization was implemented in those years made it a “new” phenomenon (Hemming & Mansoor, 1987). Before better defining what privatization is (see 3.2.1), the rest of this section will describe the context in which this phenomenon arose.

According to N. Bellini:

“privatization has been the result of an unprecedented convergence of domestic and international causes” (Bellini, 2000, p. 26).

Domestically, there were the needs to reduce the heavy budget deficit created by the welfare state and to “revitalize” the economy after the economic crisis of the 1980s. Internationally, there were pressures from other privatizing governments worried by the possible unfair competition of foreign SOEs.

In the 1980s a new economic thinking started to challenge the same theories that supported the existence of SOEs. The classical concept of “natural monopoly” narrowed, coming to indicate only limited segments of the regulated industries: those characterized by large economies of scale. By contrast, separating these industries in a wholesale market (where the owner of the main infrastructure is a natural monopolist) and a retail market (provision of services), competition in these latter markets became feasible.

Moreover, the link between market failure and state intervention vanished: other, more efficient and less anticompetitive means could be used to solve the problem of market failure (Geradin, *The liberalization of State Monopolies in the European Union and beyond*, 2000).

In contrast to the theory of “market failure”, a new theory describing the failures of Public ownership came to dominate the economic thinking: the theory of Government Failure. This theory recognizes that the public sector underperforms the private one.

However, these theories are partially rooted in a period of economic instability, which started from the first price shocks after the OPEC price increase during the 1970s and 1980s. Further, international competition intensified and new technologies made their first appearances. The consequent inability of national economies to adapt to changing conditions was partially blamed to the public sector. Thus, the theory of “Government failures” emerged, whose main concepts are Political interference and Bureaucratic failure (Hemming & Mansoor, 1987).

Political interference refers to the “arm’s length principle”, namely it was believed that the government influence extended beyond the necessary to ensure that SOEs’ managers were to fulfill their main objectives, while politicians were considered to deviate from these same objectives and to influence them with non-economic and non-social aims. Further, SOEs gave rise to a second type of failure, the Bureaucratic failure, which is rooted in the principal-agent problem. In support to this concept the theory of property rights and the public choice theory emerged¹⁶.

¹⁶ For a summary of criticism to property rights theory and public choice theory see (Starr, 1988).

- Property rights theory states differences in organizational behavior on the incentives created by the owners of property rights. According to this theory, the government, which owns property rights of an SOE does not have access to shared information and thus faces difficulties in providing the appropriate incentives to SOE's managers. In turn, managers face limited power in so far as the Government restricts their rights to act. The consequence is that the managers' objectives become "attenuated", they will perform up to the standard requirements set by the government, which are modest in comparison with private firms' ones (Starr, 1988).
- Public choice theory also sees the separation of ownership and management as the main cause of inefficiency. This time SOE's managers will seek to maximize their budget, in order to obtain higher salaries, greater power and other perquisites. By maximizing budget, managers are less concerned with minimizing costs, thus the government spending will be higher and there will be an inefficient allocation among governmental agencies and inefficient production (Starr, 1988).

Overall, during the 1980s, different elements of ideological, political, technological and economic nature combined together to challenge the nature of SOEs. The neoliberal agenda started to view privatization as a solution to external factors, such as price shocks and intensified international competition, as well as internal problems, such as budget deficits.

3.1.2 DEFINING PRIVATIZATION

Privatization is a fuzzy term, especially because it has political features, thus it is good practice to start providing the definition that will be used throughout the chapter.

The process of privatization is associated with two parallel phenomena: a negative one, the withdrawal of the state from the economy, which invokes a reduction of the public sector; and a positive one, the spread of the private sector in the economy, which counterbalances the reduction of the public sector with an enlargement of the "free market". However, we are not living in a black-and-white world populated only by "public" or "private" entities. Instead a myriad of different intermediary enterprises exists between these two poles. Examples are provided by all those sectors in the economy that are privately owned, but they are

regulated by the Government or by those private enterprises where the government keeps “golden shares” and so on.

In the article “The meaning of privatization”, P. Starr introduces two definitions of privatization¹⁷:

- (I) “any shift of activities or functions from the state to the private sector”;
- (II) “any shift of the production of goods and services from public to private” (Starr, 1988).

The difference is subtle but pivotal at the same time. The former (I) definition is more general, encompassing not only any intervention that shifts public ownership and financing to private hands, but also all kinds of reductions of State interventions, such as regulatory activity and State aid. The latter (II) definition is narrower as it excludes any deregulation and spending cuts of the State, while focusing only on a shift of the production of goods and services from the public sector to the private one. Therefore, excluding from the concept of privatization any reduction of government’s intervention in the economy (“withdrawal of the state”) allows the fact that privatization may actually result in an expansion of the role (and intervention) of the State in the economy. For example, under Thatcher’s Government, the privatization of British Telecom occurred along with the creation of a regulatory agency, OFTEL (Office of Telecommunications), and a similar agency was founded for the privatization of British Gas as well (Hemming & Mansoor, 1987). Therefore, in those cases, privatization led to a reduction of the direct control of the State in those sectors, production shifted to private hands, but at the same time it involved an increase in the regulatory activity of the State, thus de facto increasing State intervention in the market. Thus, a first misconception of privatization is that, while by definition it represents a reduction of State-owned assets and production, **the actual size of state intervention might increase**. In Bellini’s words:

“the privatization process appears to be (and actually has been) a great opportunity not for the absolute retreat of the state, but for a substantial increase in its effectiveness, the result of policy refocusing and policy modernization, which

¹⁷ In this research privatization is considered a state-driven process. Privatizations can also originate not from a public policy, but from a demand for private production (demand-driven process). For instance, the demand for private University or for private medical care often originates not from the state but from consumers.

have substituted new forms of control and guidance for the direct management of economic activities" (Bellini, 2000, p. 29).

In lieu of these considerations, the initial neoliberal question "how much state and how much market" should be posed in a different way: it is not a matter of the "quantity" of state intervention, but it is a matter of the "quality" of the intervention and thus of the role of the state in the economy.

Privatization and government policies

There are several methods to carry out privatization. In the IMF report "Privatization and Public Enterprises" (Hemming & Mansoor, 1987) the proposed methods involve a shift in the ownership: sale of the assets or of the shares of an enterprise, liquidation of the enterprise, and the transfer of the ownership of the enterprise by means of nominal sale ("giveaway" method¹⁸). However, privatization can be attained through means other than ownership transfer. According to P.Starr (1988) there are four policies to privatize an enterprise or a sector:

- 1) Cessation and disengagement of the public enterprise from the role that it previously had. This policy does not involve any shift in the ownership, while it allows private parties to step in and gradually substitute the role of the SOE. Similarly, the "privatization by attrition" method involves a reduction of the volume of goods and services produced by the SOE or a reduction of their variety or quality, which leads to a shift in demand from the public-produced products to the private ones.
- 2) Sale of the assets or of the shares of an enterprise. This policy can be carried out in several ways: auctions, nominal sale, liquidation and so on.
- 3) The government can withdraw from the direct production of goods and services and finance private entities to produce them, such as through subsidies, state-aids, contracting-out part or the whole production.
- 4) Deregulation of entry into the segment of the economy previously occupied by an SOE and the dismantling of its public monopoly.

Therefore, privatization and its outcomes vary greatly according to the policy implemented. This leads me to the second misleading element of privatization:

¹⁸ The "giveaway" method is more appropriate when the SOE is incurring heavy losses and a deep reconstruction is needed (Hemming & Mansoor, 1987).

privatization does not always lead to a private company; instead there is a wide range of possible outcomes with complete privatization and partial privatization at the extremes.

For instance, let's take into consideration the third policy proposed by P. Starr: under partial privatization, the State may continue to finance the production of some goods and services without actually operating them. In this case, there is a "dilution" of the responsibilities and accountability of the State; but any reduction in the financing of the public sector is observed: the State must still collect taxes in order to finance it. This is a form of privatization whose outcome is not a private company, and where State intervention remains unchanged, or even increased (the public company now has to monitor the service provided by the private partner).

Another example is the sale of assets which involves only a partial shift of ownership from the public to the private sphere. The Government often keeps control on the privatized enterprise through different means (e.g. golden shares).

Benefits of privatization

Given the existence of Government failures and the condition of monopoly where the public enterprise is embedded, it is possible to conclude that the public entity underperforms in terms of productive efficiency and allocative efficiency. Both these failures are addressed and solved by the process of privatization.

First of all, privatization brings about an improvement of productive efficiency¹⁹. This is because, being productive efficiency a function of the ownership structure, shifting the ownership from public to private hands leads to several advantages. One is the reduced political interference: now management accounts only to shareholders. Further, the presence of the latter increase managerial incentives to comply with the general firm's objectives as monitoring is facilitated. Moreover greater attention is paid to profits (thus greater attention to cost minimization), given the reduced focus on other "public" objectives of the SOE (see Chapter 2). Then, the management of the privatized firm has to comply with regulatory frameworks (e.g. antitrust law) which couldn't apply in the previous situation of legal monopoly. Lastly, a change in ownership subjects the privatized company to

¹⁹ Productive efficiency arises when the production is maximized given the resources at hand (producing at the hedge of the production possibility frontier).

the discipline of private capital markets and to the market for corporate control²⁰. At the same time the firm can gain access to private financing. All these elements might give greater incentives to the former SOE to seek for productive efficiency.

A second form of efficiency which might arise after privatization is allocative²¹. This kind of efficiency is not a function of the ownership structure per se, but it largely stems from the structure of the market where it operates. Privatization may increase allocative efficiency first, because it spurs the development of domestic capital market and second, and most important, privatization may increase competition in the market through deregulation and the breaking of the statutory monopoly.

According to the IMF report “privatization and public enterprises”, most of the gains of privatization come from this last source of efficiency (Hemming & Mansoor, 1987). Increased competition is associated with entry of new competitors into the market, bringing prices down and increasing product differentiation. However, the attainability of such efficiency is constrained by: firstly, the extent to which markets can actually be made more competitive and secondly, the incentives and ability of the privatized enterprise to hinder competition through anticompetitive practices. These last two elements will be the subjects of the rest of this chapter.

At this point, it is important to underline another misleading element of the definition of “privatization”, namely that **privatization does not imply increased competition**. The simple shift of production from the public sector to a private enterprise does not entail a more competitive market: competition is not a function of the ownership structure but of the structure of the market. Privatization may lead to increased competition, but it needs to be accompanied by policies which change the market structure and safeguard genuine competition from possible abuse of dominant positions.

In turn, if allocative efficiency is the main source of benefits from privatization and it is a function of the competitiveness of the market, thus privatization, conceived

²⁰ This is beneficial as far as the new privatized firm does not have preferential access to public financing such as through state-aids and subsidies.

²¹ Allocative efficiency is reached when the output is chosen where price equals marginal cost of production, thus reaching the optimal distribution of goods and services.

as a simple change in ownership structure, does not entails benefits. This point is clearly stated in the IMF report:

“significant gains in efficiency are most likely if certain major public monopolies are privatized, but only if they are thereby exposed to competition and their monopoly power reduced” (Hemming & Mansoor, 1987, p. iii).

Policies that attempt to change the market structure go under the name of “liberalization”. Before analyzing in detail these policies, the following section 3.1.3 will analyze the practice of privatizing a public monopoly without liberalizing the market or how it called “bad privatization²²”.

3.1.3 “BAD” PRIVATIZATION AND COMPETITIVE CONCERNS

Liberalization and privatization are two distinct phenomena, although they are often confused, as well as the concepts of private ownership and competition are confused. The two policies (privatization and liberalization) can be undertaken together: it is possible to liberalize without privatizing and, the other way around, privatize without liberalizing. While the next section will take into consideration the joint effect of the two policies, this section will describe the effects of “bad privatization” on competition.

Historically, state ownership was thought to increase competitiveness in markets governed by private oligopolies as it would have guaranteed the existence of alternative entrepreneurial projects (Toninelli, 2000). The same belief could be associated with the first wave of privatization: it was believed that a simple change in the ownership structure is enough to create a “market”. However, the term “bad privatization” referred exactly to that privatization which *“simply transfer(s) the ownership of anticompetitive firms or create(s) private national monopolies or stronger oligopolies”* (Toninelli, 2000, p. 32).

Examples of this type of privatization were common at the beginning of the first waves of privatization. For instance under the Thatcher government, public monopolies such as British Gas and British Telecom were sold entirely to private parties, substituting private monopolies with public ones (Starr, 1988). Another example is the privatization of Alfa Romeo in Italy by Fiat, when it was able to

²² As defined by N. Bellini in his essay “Decline of State-Owned Enterprises” (Toninelli, 2000)

successfully counteract the attempt of Ford to buy the shares of IRI (Istituto per la Ricostruzione Industriale – Institute for Industrial Reconstruction) (Toninelli, 2000).

These examples of “bad” privatization should worry both governments and competition authorities to avoid replacing public monopolies with private ones. The critical issues are: (1) the potential exceptions to the newly privatized SOE and exclusive contracts granted by the State; (2) the potential anticompetitive behavior of the privatized SOE in the market, which is related to the abuse of dominant position, given the relevant size of the former SOE. Both issues can be addressed by the competition authority taking an active role in the design of the privatization policy ex-ante and in overseeing the incumbent behavior ex-post.

What are the incentives of a Government to carry out such privatization policy? There are two main reasons. First, the Government might find itself in a conflict of interest: on the one hand the wish to create a more efficient industry structure and, on the other hand, the wish to sell the public company at the highest possible price. This might be the case of British Telecom and British Gas: the two monopolies were not broken up and the option of putting liberalization first was expressly rejected for the fear that it would reduce the share price of the companies (Kay & Thompson, 1987).

Date	Enterprise	Share sold (percent)	Proceeds (£ millions)
1981	British Aerospace	51.6	43
1981	Cable & Wireless	49.4	182
1982	Britoil	51.0	627
1983	Cable & Wireless	27.9	263
1984	Enterprise Oil	100.0	380
1984	Jaguar Cars	100.0	297
1984	British Telecom	50.2	3600
1985	British Aerospace	48.4	346
1985	Britoil	48.9	425
1985	Cable & Wireless	22.7	600
1986	British Gas	100.0	5400

Table 3 – United Kingdom: privatization of major public enterprises. Source (Hemming & Mansoor, 1987, p. 11).

Looking at Table 3, it is interesting to notice that the prices at which the two British SOEs were sold clearly outperform the price at which other companies were sold. Clearly, the value of a monopolistic firm is higher than that of a firm which is broken up or secured to competitive pressure through liberalization.

A second reason for carrying out a bad privatization comes from the wish to build, defend or strengthen “national champions”. On the one hand, supporters of National Champions see a number of benefits, including: creation or safeguarding of jobs in big firms, creation of economies of scale which allow the firm to compete with big multinational enterprises, enhancing country’s national presence in worldwide markets, secure supply of strategic resources (energy, military, financial and so on) in time of crisis.

On the other hand, the creation of National Champions assumes greater importance when privatization is associated with “denationalization”, namely the transfer of control of the privatizing company to foreign investors and managers, thus a further loss of sovereignty of the State in that sector. In general, the fear of denationalization is greater, greater is a nation’s dependence on foreign investments, and the relative power of a State in the world system is smaller. However, this is a concern for European economies too. Interesting evidence is the fact that up to 1988, the majority of the privatizations carried out in the United Kingdom and in France brought about little or no change in the top management (Starr, 1988). This example shows the power of the States in the post-privatization scenario.

3.2 PRIVATIZATION AND LIBERALIZATION

Privatization is a “fuzzy” term, with unambiguous political origins and objectives. Three elements were underlined in the previous section:

- (1) first, privatization does not mean withdrawal of the state, but state intervention is more likely to increase through forms of control other than direct ownership;
- (2) second, privatization does not always lead to the creation of a private company, the State often retains control;
- (3) third, privatization does not imply increased competition.

Under “bad” privatization, it was showed that a change in the ownership structure alone does not have the beneficial effects acclaimed by the political agenda. As N.Bellini writes: “*the outcome of privatization depends particularly on the extent to which the decrease of State ownership has coincided with a process of market awareness, embracing both the liberalization of a market and its reinstitutionalization*”. The last two phenomena cited by N. Bellini are the main subject of the rest of the Chapter. First of all a definition of Liberalization is given and its main elements are explained. Then, an application follows of competition theory to a selection of the issues that might arise in regulating post-liberalized markets.

3.2.1 DEFINING LIBERALIZATION

Liberalization should not be confused with privatization, the two phenomena are distinct and they can be carried out together or individually. For instance the 4th policy option of privatization (entry deregulation of public monopolies) is a type of privatization that is also liberalizing.

Liberalization is usually defined as “the opening up of an industry to competitive pressures” (Starr, 1988). However, it can be argued that this definition describes the goal of liberalization itself, rather than the path towards that end.

In this section, liberalization will be defined as the policy mix, preferably undertaken with privatization, whose goal is to ensure a level playing field for effective competition to take place in a market previously dominated by an SOE. The reasons why it is important to liberalize will be explained below. Later in the section, the elements of this “policy mix” will be described.

Motives of liberalization

Liberalization is a sector-specific and context-specific phenomenon. Sector-specific, in the sense that according to the economic sector targeted, the policies which aim at creating competition are different, as the possibilities of opening that market to competition can differ and its outcomes will differ too. Context-specific means that the outcomes of liberalization depend on where liberalization is applied: is it implemented in a first world country or in a third world country? Is it applied in a mixed economy, or in a market-oriented economy?

In general terms it can be stated that the benefits of liberalization are the benefit that competition will bring in. As previously stated, the contestability of the market might improve allocative efficiency.

In order to better understand the more specific reasons for liberalization, it is interesting to introduce hereafter a statement of the former Commissioner of the DG Competition Mr. van Miert, taken from a speech he delivered at the conference “Competition, Liberalization, and State Monopolies” held in Liège on 5-6 November 1998.

“it can be said that liberalization in the European Union has mainly been an unavoidable consequence of the establishment of the internal market (.)t is obvious that a market based on competition and free circulation of goods, services, people and capital is at odds with systems based on national monopolies (...) our liberalization policy was therefore conceived as an indispensable instrument for the establishment of the internal market” (Van Miert, 1998).

Perceiving the changes that in the mid-1980s were happening in the United States and in England, the European Commission (the “Commission”) initiated a major gradual programme of liberalization. First, starting from the air transport and the telecommunications sectors, it has recently started in other fields of the European economy, especially in the energy one (gas and electricity).

According to Commissioner Van Miert, there are two main objectives of this major European liberalization.

- (1) The first is described in the passage reported above: liberalization is meant to promote economic integration within the internal market and hence competitiveness and employment. A market formed by many submarkets, each controlled by a monopolist, is clearly not in line with the concept of internal market and is probably a source of inefficiency. This objective further refers to Article 4 of the EC Treaty (Principles) which states the assumption that in general free competition is the best way to satisfy competition needs.
- (2) The second objective is the advantage of consumers. Rendering markets contestable has the effects of lowering prices and increasing the quality and variety of goods and services offered. The section of the DG Competition website dedicated to Liberalization also refers to advantages for consumers

in terms of lower prices, new services offered “usually more efficient and consumer-friendly than before” (Competition).

Ensuring competition is therefore the main aim of a liberalization policy, with all the benefits that come with it. However, liberalization has more objectives and outcomes of liberalization. For instance, in third world countries liberalization (as well as privatization) is related to the opening of the market to foreign investors and foreign firms. In the case of liberalization, new foreign companies might enter the market. The association of liberalization with FDI (Foreign Direct Investment) is nowadays also common for first world countries and protectionists barriers often arise.

Liberalization policies

How can liberalization be implemented? Generally there are three main “tools” of liberalization policies:

- 1) Deregulation, the removal of exclusive rights of SOEs
- 2) Regulation²³, ex-ante intervention to change the market
- 3) Competition rules, ex-post intervention to sanction anticompetitive behaviors

The first element of liberalization seems to be clashing with the two following and especially with the second. However, it is a common mistake to identify the term “deregulation” with liberalization. Instead, deregulation can be conceived as a first step to promote competitiveness: to remove all legal barriers existing in the market, which previously protected a public monopoly. Thus deregulation aims at creating the playing field for competition. It is usually accompanied by privatization (or it is part of the privatization policy).

Unlike the first tool of liberalization which implies a reduction of the existing regulations, the other two elements advocate for an increase of the regulatory and control activity of the State. They are both important for the leveling of the playing field previously created in the first step. Regulation is a form of ex-ante intervention aimed at reducing the risk of future anticompetitive behaviors by incumbents (which often are the former SOEs). The importance of this element is

²³ In this section the term “regulation” introduced as one of the pillars of a liberalization policy refers to the set of legislations which restrict the structure and behavior of the incumbent monopolist in the liberalized market. It should not be confused with the previous regulation which controlled and protected the SOE.

underlined in the proposal for a “Directive on interconnection in telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision (ONP)”:

“While the market is moving towards full competition, however, an appropriate ex-ante regulatory regime will be required to reduce the risk that existing players might use their strength to discourage new potential operators and service providers from entering the market” (Commission, 1995).

Such regulations can impose structural changes in the present market, such as the breaking up of a monopoly or imposing to sell part of its assets or divests from certain activities, or behavioral changes, for instance imposing to the monopolist to publish prices for network access, to undertake certain accounting rules and so on.

Further, competition rules played a pivotal role in the liberalization process. Article 86 and article 95 Directives, Article 86 decisions and Article 82 are the most important ones (Geradin, *The liberalization of State Monopolies in the European Union and beyond*, 2000). Competition rules are a form of ex-post intervention which controls and sanctions anticompetitive behaviors, and they have acted as a “can opener” in promoting liberalization in many sectors (Van Miert, 1998).

Therefore, two are the main misleading points of liberalization. First, liberalization as simple deregulation is not effective. In the words of Commissioner Van Miert:

“it is evident that by putting an end to legal monopolies, dominant position does not disappear. The overwhelming market power which has been accumulated by them during the long period of legal monopoly, will make cases regarding the exercise of market power rather common in the sector” (Van Miert, 1998, p. 8).

Therefore the second point: effective liberalization is not reducing regulation, but rather it rather implies an increase of the regulatory activity. This regulatory activity (and the use of competition rules) secures a level playing field for competition.

Regulatory activity of liberalization

Successful liberalization is not simply the removal of legal entry barriers. There exist a myriad of other economic barriers to entry such as: the existence of switching costs, which add to the natural customer’s inertia and disinformation which limit the adoption of the new services offered by the entrants; incumbent

control of key inputs, this is common in network industries (gas, electricity, telephone and so on); possible anticompetitive behavior of the incumbent. Therefore, in order to secure competition in a market, an efficient set of regulations which aim at the removal of these barriers should be implemented.

It is of key importance to avoid anticompetitive behavior of the incumbent. The former legal monopoly often remains a monopoly in the newly liberalized market for several reasons: its first mover advantage, the ownership of “essential facilities”, its size, its relationships with the State, which often continues to grant exclusive contracts and aids to the former SOE.

Therefore, a number of questions arise on what the target of the regulatory activity of liberalization should be. First, liberalization might need to disadvantage incumbents in order to allow entry. This can be done through structural changes or behavioral changes (see section above). Further, some forms of monitoring of the former SOE can be required and can be imposed to publish the prices of its offers.

Further, should regulations provide assistance to competitors (entrants)? This is a tricky question, as the fundamental rule of the competition authority is that it should aim at protecting competition and not competitors.

Another aim of the regulatory activity is to inform of and “teach” customers new possibilities. Customers are often used to the provision of a certain service by the public monopoly (the brand name of a monopoly is often associated with the service itself) and might not even be aware of the new services offered.

3.2.2 ANTICOMPETITIVE PRACTICES OF PRIVATIZED SOEs IN LIBERALIZED MARKETS

It has been showed that privatization alone does not bring the acclaimed benefits and larger benefits arise from opening up the market to competitive pressures. Therefore liberalization is a fundamental complementary phenomenon to privatization. However, as discussed in the previous section, liberalization is not a policy, but a mix of different policy actions, whose outcome is the change in the “style” of the regulations in place, rather than mere simplification or elimination of these. The next question to answer is: which liberalization policies should be undertaken? There are no “good” or “bad” liberalization policies and an evaluation should be made case by case. However, even after a liberalization policy, there

might be situations which are of concern to the competition authority. Taking a horizontal approach to different sectors and different liberalization policies, it is possible to underline the main issues of liberalization: possible behaviors of the incumbent firms, facilitated by liberalization policy which is not well implemented, might hinder the efficiencies emerging from competition, or might even exclude competition and competitors.

a. Strategic investments

Privatization and liberalization policies are undertaken also with a presumption that competition will result in increased capital investments and accelerated adoption of new technologies. Investments can come both from the incumbent and from entrants after the opening of the market. However, it may happen that some liberalization policies which call for such increase in investments, incentivize the incumbent to over-invest with anticompetitive aims, namely with the goal to deter entry or to drive competitors out of the market.

In the essay “Competition’s effect on investment in digital infrastructure”, G.A. Woroch (2000) distinguishes two types of entry policies (liberalization policies): service-based entry and facility-based entry. The differences between the two stem from the kind of restrictions and the type of competition allowed by regulators. Service-based competition is deemed to have limited ability to exert competition pressures as the entrants are required to access the network owned by the incumbent, thus the latter has some control over the price and services that resellers can offer. However, service-based entry is seen as a “stepping stone” towards facility-based competition (Woroch, 2000). Unrestricted facility-based entry is deemed to have a greater potential to spur capital investments and thus to be more effective to accomplish the previously stated goal than the service-based one. Allowing competition on capital investments between incumbent and entrants and between entrants is also more efficient, as competitors in the market are better informed than regulators as to where, when and how much to invest and which technology and services to deploy. Further, they also tend to implement the latest techniques to differentiate themselves from existing offerings. However, facility-based competition has some drawbacks. In the first place, it might result in a duplication of capital investments. A second possible drawback is that, if the industry presents natural monopoly, then facility-based competition will be

ineffective and the only effect will be to raise overall industry costs. A third concern is related to the investment behavior of the incumbent. Facility-based competition may not accomplish its goals if the dominant incumbent responds to the competitive threat by altering its investing pattern strategically. If the latter argument is proved to be a possible strategy that an incumbent may undertake, then it should be placed under scrutiny of competition rules and a less facility-based form of competition would be wished.

This type of anticompetitive behavior undertaken by an incumbent goes under the name of “strategic investments” or “predatory investments”, as it shares some common aspects with the strategy of predatory pricing. Strategic investments are defined as the behavior carried out by an incumbent for a limited period of time, by which he/she invests more than it is profitable in the short-run, with the expectation of increasing its profits in the long-run once the competitors have been driven out of the market or entry threats have been removed (Motta, 2004).

This type of predation can be undertaken in a manner of space or of time. Namely the incumbent might invests strategically before or after the entry occurred or in certain sectors and niches. The possible economic predictions of the outcomes of such predatory investments are summarized in Table 4. In the dimension of time, an incumbent can undertake predatory investments before the entry occurs or after the entry occurs with the aims, respectively, to deter entry and to exclude competitors. The first case can happen when a facility-based liberalization policy undertaken provides a temporary monopoly or oligopoly. Namely such policies announce a future date where competition will be admitted, but they explicitly preclude competition before that date. Such a policy may not only postpone investments by future suppliers, but also may provide ample time for an incumbent to devise strategic investments to limit the success of entry (Armstrong & Sappington, 2006). Such policy further precludes the future entrants from entering before the incumbent take full market.

	Incumbent	Entrant
Timing	<ul style="list-style-type: none"> - Increased investment to deter entry threats - Increased post-entry investment to exclude entrant 	<ul style="list-style-type: none"> - Enters after initial investment to benefit from market information - Enters before incumbent takes full market
Location	<ul style="list-style-type: none"> - Fills open niches to deter entry - Matches early occurrences of entry into incumbent markets with investments that signal ability to compete 	<ul style="list-style-type: none"> - Locates away from (near to) existing competitors if price competition is strong (weak)

Table 4 – Theoretical predictions for investments timing and location by incumbent and entrants. Source (Woroch, 2000).

Like in predatory pricing, it is pivotal to define the limit between an optimal strategy and a non-optimal one (which makes the incumbent incur losses), thus one whose only intent is to hinder competition. This is however extremely difficult in the case of predatory investment, while in predatory pricing there is the cost benchmark, it is difficult to determine which the optimal level of investment is. Further difference with predatory pricing is that strategic investments imply sunk costs, while low prices are reversible.

These last considerations do not exclude the fact that strategic investment is a possible strategy that hinders potential entrants, and thus precludes competition in the market. Further, the fact that such investment strategies are difficult to tackle, also means that an ex-post intervention through competition rules is inefficient. Facility-based liberalization policies should therefore impose a trade-off between the possible beneficial investments an incumbent can undertake and the entry incentives of future competitors.

b. Foreclosure of network access

Targets of the liberalization policies undertaken in the European Union and in the United States are network industries²⁴. Among these it is important to remember the telecommunications industry, which has been open to competition since 1998 in many EU Member States (Van Miert, 1998) the postal services industry, whose opening is due in 2011 (Panzar, 2008), as well as the energy industry (gas and electricity). In these sectors, where the physical and/or logical infrastructure plays a crucial role, strong economies of scale are at work (Crampes, 1997). Further, these industries have been historically characterized by two elements more: public monopoly and vertical integration²⁵. While these features played a pivotal role in the past, as the State monopoly protected and incentivized the SOE to build the main infrastructure and to render it available to the general public, and the vertical integration has secured a higher level of control and coordination of the resources needed, they have marginalized any competitive incentive at all levels of the value chain.

Therefore, when through liberalization and privatization policies regulators intervened to foster competition at different levels of the Vertically-Integrated Producers (VIP), several issues arose on the drawing and implementation of these policies.

Two main approaches undertaken by regulators to allow entry into these markets are the facility-based entry and service-based entry. While facility-based entry approach was discussed in the above section with its implications of strategic investments, this section will deal with service-based entry, namely entry of competitors into the provision of service, thus in the downstream market.

In this market, the duplication of the infrastructure is not required, as the entrants would use the main infrastructure, which is owned by the incumbent VIP and which in turn acts as “essential facility”. Access to the infrastructure becomes therefore essential for any competitor providing the service. At this point, the role of the incumbent VIP, which owns and operates the infrastructure through which it

²⁴ The definition of Network Industry is not well-defined. The electricity, telecommunications and postal services must be studied as networks, while other industries which present characteristics of networks are usually not considered network industries, such as insurance services, food-retails (e.g. multi-point distribution).

²⁵ A vertically-integrated firm is defined as a firm which controls all successive processes until the good or service arrives to final users.

is providing the basic services in a universal way, becomes paradoxical. On the one hand, it faces a competitive pressure on the provision of the service, on the other hand its competitors are forced to access the VIP's infrastructure in order to operate in the market. In turn, it is clear how the VIP is incentivized to adopt strategies which could hinder competition. As described in the Commission Notice on the Application of Competition rules to access agreements:

“(s)ome incumbent TOs may be tempted to resist providing access to third party service providers or other network operators, particularly in areas where the proposed service will be in competition with a service provided by the TO itself (...) this resistance will often manifest itself as unjustified delay in giving access, a reluctance to allow access, or a willingness to allow it only under disadvantageous conditions” (European Commission, 1998, p. 52).

Therefore, according to the Commission's Notice, the VIP incumbent may act to:

- a. refuse to give access to essential input.
- b. provide access at disadvantageous conditions.

In the latter point, “disadvantageous conditions” can take different forms (Armstrong & Sappington, 2006):

- b.1. margin squeeze
- b.2. limit the quality of the inputs delivered to rivals
- b.3. delay the provision of access

Again, two are the main areas of interventions from the part of regulatory authorities: ex-post intervention through competition rules and, ex-ante intervention through regulation. The competition authority intervention is fundamental given the dominant position of the VIP and it is mainly based on the “essential facility doctrine”. The ex-ante intervention is also important to create the playing field for competition. Regulation can impose both a (1) structural change in the market (mainly in the ownership and control structure of the VIP) which is a more radical approach based on the breaking up of the VIP and prohibiting the essential facility spin off from reentering the competitive segment; and (2) a less radical one which advocates for the preserving of the VIP while regulating access of the essential inputs.

The latter regulatory approach goes under the form of “interconnection policies” and it will be the subject of the rest of the section. It will first describe the price strategies and non-price strategies that the incumbent VIP is incentivized to undertake that are of concern to the regulatory authority as well as to the competition authority. Then some conclusions will be discussed in relation to the particular features of the networks.

Price strategies

i. Margin Squeeze

The anticompetitive price strategy of margin squeeze is a product of the increased competition in the post-liberalization sectors, especially in the telecommunications and postal sectors. Margin squeeze can be defined as a strategy carried out by a VIP which exploits its dominant position over an essential input supplied to downstream rivals as to “squeeze” their profit margin on the downstream market, market where it is also operating (Geradin & O'Donoghue, 2005).

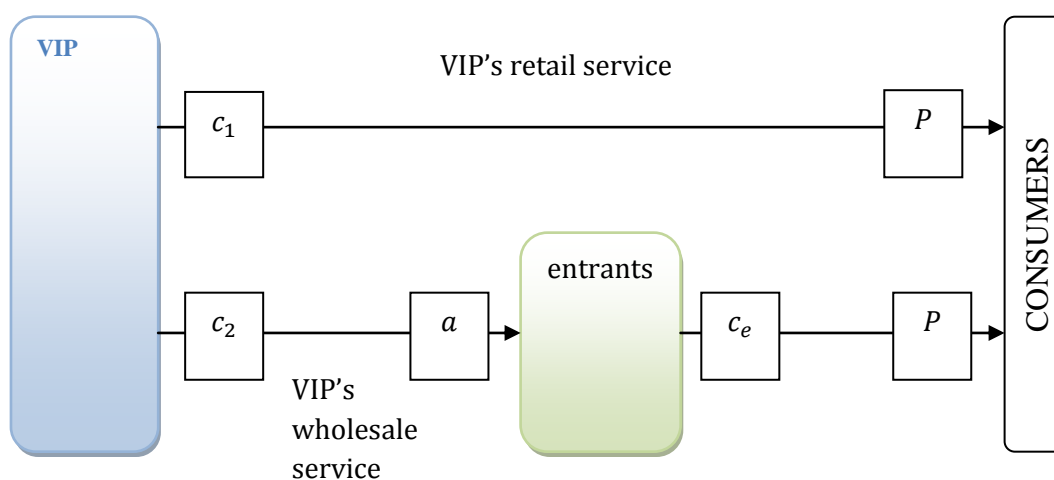


Figure 2 – market structure of a post-liberalized market with a dominant VIP and entrants. Where P is the price to consumers on the provision of the service; a is the price of the wholesale service that the VIP is mandated to provide to the entrants; c_1, c_2, c_e are respectively the marginal cost of providing the VIP's retail service, the VIP'S wholesale service and the entrants' retail service.

As graphically represented in Figure 2, the structure comprises two markets: the downstream market and the upstream market. In the downstream market the incumbent VIP and the entrants compete for customers in the retail service provision. The upstream market is dominated by the incumbent VIP which owns and control the essential

infrastructure, and it is obliged (by a regulatory authority) to provide access to the infrastructure to the rivals it faces in the downstream market.

The margin squeeze can be carried out in three different methods:

- 1) by raising upstream price (a)
- 2) by lowering downstream price (P)
- 3) by combining the two

Both terms (upstream price and downstream price) are contained in the profit function of the potential entrant:

$$\pi_{entrant} = (P_{(Q)} - c_e)q_e - aq_e$$

Equation 6 – profit function of an entrant. Where q_e is the quantity produced by the entrant.

By lowering $P_{(Q)}$ and/or increasing a , the profit of the entrant $\pi_{entrant}$ can be reduced up to an unsustainable level, thus lowering the competitive pressure in the market driving out competitors or controlling them.

It is useful to analyze the conditions under which margin squeeze can be carried out by the incumbent and its incentives to do so.

Margin squeeze requires a series of conditions to be met. Above all, the market structure must be characterized by the two markets (downstream and upstream markets), by a VIP present in both market, and by entrants which operate and rival with the VIP only in the downstream market. Further, the input controlled by the VIP must be “essential” for the entrants: if there exist alternative inputs available to be used by the entrants, then the margin squeeze would not be effective, as entrants can switch to these resources. These alternative inputs can be provided by different technologies, for example the use of a wireless infrastructure rather than cables for the provision of the internet. Once an input has been declared “essential”, this also must constitute a relevant fixed proportion of the downstream costs. Further conditions are the effective identification of the margin squeeze abuse and, alternatively, an efficient explanation to be provided by the VIP to justify the eventual reduction of the downstream price or the increase of the

upstream wholesale service price (Geradin & O'Donoghue, 2005). The Access Notice drafted by the Commission proposes two main tests to reveal the margin squeeze strategy (European Commission, 1998). The first consists in demonstrating that the incumbent's downstream branch could not operate profitably at the price charged by its upstream branch to competitors. The second consists in proving that the margin between the upstream price and downstream price is insufficient to allow a "reasonable efficient service provider" in the downstream market to obtain a profit²⁶.

Additionally, competition authorities should inquire whether the VIP is incentivized to undertake such strategy, especially considering that a component of margin squeeze involves a loss of profit for the firm. Indeed, a competitor in the downstream market might represent a valuable customer (and therefore a source of profit) in the upstream market. Thus an incumbent will carry out a margin squeeze strategy only if it can outweigh the loss incurred in the upstream market with an increase in the number of customers (stolen to the disadvantaged entrant) in the downstream market. This can happen if (1) the downstream margin is higher than the downstream margin for the VIP and (2) if the VIP is actually able to attract the customers of the entrant. In particular, this last point is pivotal: if the competitor's service is differentiated from the incumbent's one, or if the competitor is more efficient, then it increases the customer base, rather than "stealing" customers to the VIP market and, therefore the incumbent might not be able to pick them up once the competitor is excluded.

The following discussion will deal with an analysis of the possible interventions to correct the VIPs incentives/ability to margin squeeze. As stated above, there are two main "tools": competition law and regulatory authorities. The two types of intervention are fundamentally distinct: not only is competition law an ex-post intervention and regulatory authority an ex-ante intervention, but also the powers of the two approaches to

²⁶ Both tests are contained in paragraphs 117-118 of the Access Notice (European Commission, 1998).

correct the behaviors are different. In general, the regulatory power is more extensive for several reasons. First, regulatory authorities can impose affirmative conditions that a competition authority cannot establish. For instance, regulatory authority can mandate the provision of access to the infrastructure, it can impose at which price this access is implemented through interconnection rules, it can impose breakup of the incumbent and so on. Further, the regulatory authority can pursue policy objectives other than solely the protection of competition. This is important in the case of the privatization of the incumbent, and the Regulatory Authority can mandate a Universal Service Obligation or a redistribution policy. Lastly, the RA is empowered to impose conditions which might disadvantage the incumbent and facilitate entry in the market. Instead the CA can only intervene after an anticompetitive behavior of the incumbent, it can only protect competition, but it cannot foster competition where the structure does not allow it. This is particularly relevant for network industries, where strong network effects might create the condition for a winner-take-all situation.

Therefore, the Competition authority has a restricted ability to intervene: it has first of all a limited scope of intervention (it can change the market structure only through remedies) and it is allowed to intervene only the case of an abuse of dominance or related competition matters (such as merger control); second, competition law often clashes with difficulty in proving cases such as margin squeeze and predatory pricing.

The regulatory intervention is of two kinds: a more radical “structural” intervention, or an intervention in the behavior of the incumbent.

The structural intervention can mandate the control separation or the ownership separation of the upstream wholesale service and the downstream retail service. A type of control separation can, for example, impose to the VIP a separation of the accounting practices, thus to avoid possible cross-subsidization and cost misallocation. The ownership separation, although more effective in limiting the incentives for margin squeeze and other practices alike, presents some drawbacks: the breakup would eventually eliminate the benefit from the vertical

integration (economies of scale and economies of scope) and would further introduce the risk of double marginalization.

Generally, regulatory authorities, on the face of the uncertainty of the benefit of a radical structural intervention, have opted for price control mechanisms designed to prevent exclusionary practices. The main price regimes differ on the scope in the intervention (regulating only the wholesale market, the retail market or both) and in the type of intervention (cost-based pricing, price-cap pricing and others). Table 5 – summary of the main issues of different price regulations in post-liberalization markets. reports a summary of the different price regimes and the main issues associated with them.

		Wholesale Market	
		Regulated	Unregulated
Retail Market	Unregulated	<ul style="list-style-type: none"> - Allows margin squeeze on retail market - Allows inefficient entry (LRAIC) 	<ul style="list-style-type: none"> - Greatest probability to undertake margin squeeze
	Regulated	<ul style="list-style-type: none"> - “regulatory margin squeeze” - Vague or incomplete access terms - Global price-cap - Allows inefficient entry (LRAIC) 	<ul style="list-style-type: none"> - Allows margin squeeze in the wholesale market

Table 5 – summary of the main issues of different price regulations in post-liberalization markets.

When both retail and wholesale markets are regulated, the prices are no longer set by the incumbent but by regulators. However, according to the type of regulation implemented, the incentives and ability to margin squeeze are limited in a different degree. The first issue is the “regulatory price squeeze”: a price squeeze that arises from the pricing pattern created by the regulator. This may happen in case some services are mandated to be accessible to a large array of population,

thus *de facto* promoting predatory pricing (Geradin & O'Donoghue, 2005). Another issue is when a vague or incomplete statement of the incumbent producer's obligation is set by the regulator to supply access to rivals, which might allow the pursuing of exclusionary behaviors (Armstrong & Sappington, 2006). These behaviors might be incentivized also by a global-cap price regulation, namely a price regulation which imposes a single over-arching restriction both on wholesale and retail price. Under this regulation the VIP might cross-subsidize the predatory pricing in the downstream market with the profits earned in the upstream market. Lastly, under a price regulation of the wholesale service based on the LRAIC (Long Run Average Incremental Cost), inefficiencies might be generated. This cost-based pricing regulation does not compensate the incumbent for the foregone profit in providing access to competitors rather than selling a retail service directly to consumers. Therefore, on the one hand, the incentives to undertake margin squeeze strategies are greater and on the other hand it allows inefficient entries into the industry²⁷ (Geradin & O'Donoghue, 2005).

In case only the wholesale market is regulated (access prices), the incumbent is still able to undertake margin squeeze strategies. One possibility to avoid such behavior is through a mandate for accounting separation, or through efficient wholesale pricing regulations which also constrain retail prices. An example of such pricing regulation is the "Retail minus" approach: it mandates that the access price is equal to the retail price minus the costs that the incumbent avoids when it is the competitor that undertakes part of the cost to provide the service to end-users (Geradin & O'Donoghue, 2005). Through this strategy, it is not possible to lower the retail price as it has the effect of lowering the wholesale price as well. Another efficient price regulation is the Efficient Component Pricing Rule (ECPR): it is based on the cost of providing the input to the competitor plus a markup based on the opportunity cost of

²⁷ Inefficient entry is one that is able to enter only at the cost-based price mandate by the pricing regulation. If it is used a more efficient pricing strategy such as the cost-based one plus mark up (to account for the foregone profit of the incumbent), then these entries might not be possible any more.

the supply of the wholesale service rather than providing the retail service (Armstrong & Sappington, 2006). The ECPR is then computed:

$$a = c_2 + (P - c_1)$$

Equation 7 – Efficient Component Pricing Rule formula

Where a is the wholesale price, to which the foregone profit is added from the provision of a unit of the retail service ($P - c_1$). Instead, a LRAIC cost-based price regulation if is implemented, there is the risk to allow inefficient competitors to operate in the downstream market.

Least implemented is the combination of a deregulated wholesale market with a regulated or unregulated retail market. In general, the greater the pricing flexibility afforded to the incumbent, the more likely a margin squeeze to occur.

This section dealt with margin squeeze practice with a focus on the regulatory intervention that can be undertaken in order to limit this anti-competitive behavior. It seems clear that the regulatory approach is pivotal in securing a level playing field in network industries that present a bottleneck factor. However, while a structural approach seems more efficient the approach to regulate retail and wholesale prices are undertaken more often, although such regulations are often difficult to design. The difficulty stems from the need to balance on the one hand the incentives to invest of the incumbent and, on the other hand, allow entries of efficient competitors in the downstream market. Taking a horizontal approach it seems that wholesale market regulation matched with a price regulation based on cost plus a markup are the most effective approaches to limit the incentives and ability to undertake margin squeeze.

Non-price strategies

i. Reducing quality of inputs

A Vertically-integrated producer (VIP) can disadvantage competitors in the downstream market through means other than strategic pricing. For

instance, through the degradation of the quality of inputs served to downstream competitors in the retail market, the VIP can limit the quality of the competitors' services and thus limiting the actual competitors' ability to provide the service to end-users.

The regulatory intervention in this type of exclusionary practices is difficult to implement. One solution proposes to set a minimum quality standard for the service to be provided to competitors by the VIP. Such solution has been undertaken by the European National Regulatory Authorities for the Telecommunication sector implementing the Commission's Universal Service Directive (Commission, 2002). Article 18 of the Universal Service Directive, along with the related Annex VII of the Directive, states:

“(n)ational regulatory authorities are to ensure that provision of the minimum set of leased lines referred in Article 18 follows the basic principles of non-discrimination, cost orientation and transparency” (Commission, 2002, p. Annex VII).

In particular, the statement of the condition of Non discrimination specifies:

“those organizations [having significant market power] are to apply similar circumstances to organizations providing similar services, and are to provide leased lines to others under the same conditions and of the same quality as they provide for their own services, or those of their subsidiaries or partners, where applicable” (Commission, 2002, p. Annex VII(1)).

However, it should be argued that the only instruments the Directive provides for securing the compliance by VIPs with the rule of non-discrimination are contained (1) in the “transparency condition”, stating that the NRAs can mandate that the “technical characteristics, including the physical and electrical characteristics (...)” and other information on quality, costs and tariffs are published in an easily accessible form; and (2) in the certainty of rapid resolution of possible disputes between competitors and the VIP as stated in Article 20 of the Framework Directive (discussed below).

Clearly, a constant monitoring of the quality of such inputs is a costly and probably not effective and feasible intervention.

An alternative way could be to implement a regulation which creates incentives to limit the possible anticompetitive behaviors through a system of rewards for the provision of high quality services or a system of penalties for low quality service²⁸. More efficient interventions are the structural ex-ante intervention through the breakup of the VIP, or the ex-post intervention through competition rules.

ii. Delay provision of access

A vague or incomplete statement of the incumbent producer's obligations with regards to supplying access to rivals in the downstream market may let the VIP delays this supply, as to disadvantage competitors. This delay can be caused both by the VIP, but also may be caused by a failure to establish a timely functional dispute resolution process in the case competitors enter into litigation with the VIP. In both cases the competitors face an undue delay in accessing the essential input, thus *de facto* inhibiting their ability to compete in the retail market.

An example is described in Armstrong & Sappington paper (2006) on Chile's post-liberalized telecommunications industry. The two monopolies of the local calls market and long distance calls market (respectively Compañía de Teléfonos Chile CTC and Entel) granted few interconnection agreements with their new competitors in the post-liberalized market. The competition remained limited until the National Regulator imposed a "*dispute resolution process that ensured the timely execution of interconnection agreements*" (Armstrong & Sappington, 2006, p. 3).

The Framework Directive undertakes several mechanisms to ensure the effectiveness and timely resolution of disputes. As stated in Article 20:

"(i) in the event of a dispute (...) between undertakings providing electronic communications networks or services in a Member State, the

²⁸ These systems of rewards or penalties were proposed by (Armstrong & Sappington, 2006).

national regulatory authority concerned shall, at the request of either party (...), issue a binding decision to resolve the dispute in the shortest possible time frame and in any case within four months except in exceptional circumstances” (Commission, 2002, p. Article 20(1)).

Other than the securing of a timely resolution (4 months) the Directive empowers the NRA to “*decline to resolve a dispute through a binding decision where other mechanisms, including mediation, exist and would better contribute to resolution of the dispute in a timely manner” (Commission, 2002, p. Article 20(2)).*

c. Customers lock-in and rising switching costs

Provided that the opening of the market *de facto* increases the product offers and reduces prices, all these advantages might not take place if consumers are not able to easily identify these new services, being able to switch to the preferred product offers and being aware of the lowest prices available. Therefore, regulation should intervene to solve two main issues that might hinder the benefits of increased competition:

- 1) access to information
- 2) switching costs

In order to allow consumers ready access to information about prices, quality and features of the offers, publishing such information (the incumbent doing so) or creating preferred channels of information (such as the regulatory agency’s website) should be mandatory (Armstrong & Sappington, 2006). However, the effectiveness of information dissemination depends on the level of differentiation allowed in the market by the same product’s features. Further, the dissemination of some kind of information might facilitate tacit collusion between competitors, especially when they are symmetric in size and market power and when there are few of them (such as in an oligopoly).

Switching costs are those “foregone” costs that a customer must incur in order to change service provider. In post-liberalized markets, for a long time services have been usually provided solely by the incumbent, and new competitors have to face incumbents-driven switching costs, customers-driven switching costs and market-driven switching costs: incumbent-driven switching costs are “artificially generated” costs, whose aim is to disadvantage competitors and competition and to keep

market shares (such practices might fall under the realm of competition law); customer-driven costs are caused by factors such as ignorance, inertia and so on; market-driven switching costs arise “naturally” from some particular features of the market and the products offered, especially in the presence of positive feedback effects, network effects and economies of scale.

The main effect of the presence of switching costs (whatever they origin is) is to lock-in customers in the early adopted products, nullifying the effects of entries in the market. However, lock-in is seldom absolute, and some “artificial” practices to increase switching costs and proprietary network externalities have the effects to shift the focus of competition from single or few purchases to larger and repeated purchases, such as economies of scope, tying and bundling (Farrell & Klemperer, 2005).

Incumbent-generated switching costs can have several sources. For instance, switching costs are generated when the product offered is bundled with other products of different nature, such as the incumbent internet service provider offers the access to the web together with a VoIP fixed phone. Another type of strategy is requirements tying: the incumbent might offer customers “life cycle” contracts, thus transforming a one-time purchase in a prolonged relationship with the incumbent. One example is the provision of gas that is tied with maintenance and repairing services. Such “prolonged” relationship with the service provider might also arise from incomplete contracts²⁹: when a short-term contract contains long-term clauses that are not fully advertised or arise only when the customer will find them too costly to erase the entire contract. Other kinds of practices which increase switching costs are fidelity rebates and aggregate rebates (Motta, 2004). All such practices have the main effect of disadvantaging entry: the price of a new service offered by an entrant, even if it is lower than the incumbent’s one, might be perceived as higher, because the costs of switching provider must be added. However, such switching costs might incentivize entrants to differentiate their offers from the one of the incumbent as to pick up new customers rather than striving to get the “old” customers. Such effect is the so-called “fat-cat effect”: the incumbent might not want to expand its customer base, but rather might place

²⁹ Incomplete contracts generate the so called “dynamic switching costs”.

more weight in harvesting this base, thus encouraging entry focused on generating new customers.

Other sources of switching costs are market-generated³⁰. If the market presents positive feedbacks, network effects or economies of scale, then there is a tendency toward the “winner-take-all dynamic”. Therefore entry in such markets presents “natural” difficulties. One possible solution for entrants is to become compatible with the incumbent, if the latter allows compatibility at all. Another solution is to create a competitive network (which requires significant investments) or to find niches large enough to sustain the entrant’s business (which requires differentiation).

³⁰ “Market-generated switching costs” in this section are associated with the phenomenon of “Network effects”. According to the author, as the main effect of this phenomenon is to increase the value of a service provider and to lower the value of the concurrent services, these can be treated as increasing costs to change provider: being part of more than one network has costs.

4. CONCLUSION

4.1 HOW STATE OWNERSHIP AFFECTS COMPETITION?

State-Owned Enterprises are special form of “undertakings” that, because of the strategic importance of their economic activity, are granted several benefits that other privately owned enterprises do not enjoy. The most important ones are a privileged financial position and the statutory monopoly.

Clearly, special rights come with special duties: SOEs have to comply with objectives other than profit maximization, such as redistribution, employment, Universal Service Obligation and so on. The provision of these services would be inefficient if they are carried out by private entities. A standard argument is the tendency of private entities in “cream-skimming” the market, thus providing the services only where they are profitable, contrary to what is dictated by a Universal Service Obligation.

Therefore, a first answer to the question is that the concepts of State monopoly and competition are mutually exclusive. The Public Enterprise is waived from competition in order to better comply with its “special obligations”.

However, it has been argued that SOEs’ managers are incentivized in behave as monopolists also in markets where there is (or can exist) competition. Such condition of the State has been called by Noble Prize J.E. Stiglitz a “monopolistic State” (Stiglitz, 1988), referring to that tendency of the State in exercising its monopoly also in markets where a monopoly “is not necessary”.

Thus, if clear and transparent limits are not provided to its monopoly power, the participation of a state-owned enterprise in not-monopolized markets might lessen competition. If it is so, an SOE tends to behave exactly like a private monopoly. However there are several differences. First, a private monopolist enjoys such position because it was able to become so³¹, for instance being efficient, because it detain some competitive advantages, because it has invested heavily and so on. Second, a private monopoly faces several constraints that a public one does not

³¹ Without considering privatized monopolies.

face (especially of financial nature). Third, an SOE have an expanded ability and incentives to carry out some competitive practices. It has been showed how the incentive function that an SOE maximize differs from the profit maximizing function of a private enterprise.

Nevertheless, even if the State is managed in a way that the incentives of competitors in a market are taken into consideration, thus avoiding any predatory behavior, the overall effect is still the lessening of competition. In a competitive market populated by private enterprises, the final aim of each firm is to “win” the competition, and therefore being able to exercise monopoly power in the market. In this view, the possibility of becoming a monopolist in a market incentivize firms in compete fiercely, thus offering better services, lowering costs and prices and so on. However, if a state-owned enterprise is to enter this market, the possibility of becoming a monopolist in such market vanishes, as the State is not an investor that can be easily “eliminated”. In turn, also when a state-owned enterprise does not engage in anti-competitive practices as to reduce competition, its effect might still to “soften” competition, reducing the incentive of competitors in competing fiercely for the possibility of becoming a monopolist in the market.

4.1.1 APPLICATION OF COMPETITION LAW TO STATE OWNED ENTERPRISES

Under Article 86 of the treaty of the European Communities, it is clarified that the competition rules apply also to state-owned enterprises as it is applied to private entities. Article 86(1), addressing to Member States, lays down the following principle:

“(i)n the case of public undertakings and undertakings to which Member States grant special or exclusive rights, Member States shall neither enact nor maintain in force any measure contrary to the rules contained in this Treaty, in particular to those rules provided for in Article 12 and Articles 81 to 89”

Therefore a state-owned enterprise which adopts predatory price strategy, it should in theory be punishable under article 86 in concert with the related competition rule. However, there are two limits:

- 1) Article 86(2) provides an exception to the application of competition law:

“Undertakings entrusted with the operation of services of general economic interest or having the character of a revenue-producing monopoly shall be subject to the rules contained in this Treaty, in particular to the rules on competition, in so far as the application of such rules does not obstruct the performance, in law or in fact, of the particular tasks assigned to them. The development of trade must not be affected to such an extent as would be contrary to the interests of the Community”.

Therefore three cumulative conditions must be satisfied in order to apply the exception: first, the undertaking in question must be entrusted with “operation of a service of general economic interest”; second, the application of Article 86(1) would obstacle the ability of the undertaking in carrying out such service; third, if the pursuing of the public service affect the development of the trade in the community area, such exception should not be granted. However, it should be notices that there is no clear definition of what is a “service of general economic interest”

- 2) While article 86(1) is addressed to Member States, article 86(2) is addressed to the undertaking. There are indeed cases in which it is not clear to whom the responsibility should fall.

Therefore, Article 86 of the EC Treaty represents a possible solution to the cases in which a SOE assumes anti-competitive practices. However, often an ex-post intervention is difficult to put in practice, especially for state owned enterprises. In any case, the application of competition rules does not secure a level playing field where this does not exist.

4.2 HOW PRIVATIZATION AFFECTS COMPETITION?

The next question is: it is possible to establish such level playing field for competition changing the ownership structure of SOEs? In other words, a possible solution can be the transferring of the state ownership into private hands. Thus an analysis of the process of privatization is needed in order to understand whether, taking out the privileges of public ownership competition can increase, and the incentives to undertaking predatory pricing and rising rivals’ costs strategies diminish.

However, there are three misconceptions about privatization:

- 1) Thought privatization is usually associated with a withdrawal of the State from the Market, the actual size of state intervention may actually increase post privatization. New forms of control and guidance are often substituted to the old state ownership, and often the linkages between the state and the privatized enterprise are such that few benefits are perceived.
- 2) Privatization does not always leads to the formation of a private company. Often the outcome of privatization is a hybrid form, not all the shares are sold, or the state continues to finance the company.
- 3) Privatization does not imply increased competition. The privatization of a monopoly leads to the creation of a private monopoly, which incentives to undertake anti-competitive practices might be even greater, as to protect its monopoly power.

Therefore, privatization most of the time does not increase competition. While some benefits are created, especially as the privatized firm is now under constraints from the financial market and takeover market, the strong linkages that the firm detains with the State and its new condition of private monopoly does not affect positively competition. In privatized markets, the role of the competition authority become crucial in sanctioning potential abusive behavior of the private monopoly, however it does not have any power to create the needed playing field to foster competition.

4.3 DOES LIBERALIZATION LEADS TO MORE COMPETITIVE MARKETS?

The third policy analyzed is liberalization. Liberalization is conceived with the aim to benefit from increased competition in the market. Such policy is characterized by three types of intervention:

- 1) Deregulation, the removal of the legal monopoly,
- 2) Regulating the market, ex-post intervention as to secure a level playing field in the market.
- 3) Application of competition rules

Therefore, also liberalization generally brings about an increase in the state intervention in the market. It can be argued that such intervention is often far from being without problems. Some of the main issues which arose are:

- Securing that the regulation implemented does not reduce the incentives to invest, both from the incumbent (former SOE) and the entrants. To do so, facility-based entry regulations can be put in practice. However, such liberalization practice might incentivize the incumbent to invest strategically as to prevent entry.
- Often entry is possible when it is guaranteed to the entrants access to the main infrastructure (e.g. to the local telephone network). However such access regulations should carefully consider the price at which the access is sold and the modality of carrying out the access. A Vertically-integrated incumbent has the incentives in preventing competition reducing the profit margin of the competitors through the whole service delivered.
- Customers often are found in a condition of being locked-in the service provided by the incumbent. Causes of such conditions are the availability of information on the new service, and the presence of relevant switching costs.

Prices of access to the network, investments, availability of information and switching costs are some of the barriers that an efficient regulation should address. Other, non discussed issues may arise, such as tacit collusion, predatory price discrimination, predatory pricing and so on.

Therefore, while liberalization as a policy provides the right tools to foster competition in the market, it encounters many obstacles in using these tools.

4.4 THE ROLE OF THE STATE IN FOSTERING COMPETITION

State ownership and state intervention in the economy have been ever-present elements of capitalist economies. The question is how to tailor these activities of the State in a way to also enjoy benefits from contestable markets. Such a question has been often considered secondary, as the benefits and costs of an increase in competition are difficult to measure and to weight against immediate benefits fostered from economies of scale or from the relief of State treasury through selling a public monopoly to private parties. Further, the temptation for politicians with protectionists and predatory tendencies to exert influence over the economy will not disappear. The tendency of the State to behave as a monopolist seems innate in the same existence of State-Owned enterprises.

However, other forces such as the demand for different and improved services from customers, and the power of private enterprises that face the competition of State monopolies have been crucial in developing different tools to foster competition. Such tools are the Regulatory Authorities and Competition Authorities. Central role is played by the latter also in develop better liberalization policies and avoiding excessive political interference. Thus the final question pertains to the role of the antitrust, from simple ex-ante intervention to a more active role in formulating ex-post regulatory interventions.

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