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**Regulation of Social Services in the Least
Developed Countries:**

What Are the Issues at Stake?

Cecilia Ugaz

Working Papers No.170
December 1999

UNU World Institute for
Development Economics Research
(UNU/WIDER)

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This study has been prepared within the UNU/WIDER project on New Models of Provision and Financing of Public Goods in Developing Countries, co-directed by Professor Germano Mwabu, University of Nairobi, Dr Cecilia Ugaz, UNU/WIDER, and the late Professor Gordon White, University of Sussex (IDS).

UNU/WIDER gratefully acknowledges the financial contributions to the project by the Ministry for Foreign Affairs of Finland and the Government of Sweden (Swedish International Development Cooperation Agency-Sida).

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UNU World Institute for Development Economics Research (UNU/WIDER)
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Camera-ready typescript prepared by Liisa Roponen at UNU/WIDER
Printed at Pikapaino Paatelainen Oy, Helsinki

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ISSN 0782-8233
ISBN 952-455-021-0 (printed publication)
ISBN 952-455-022-9 (internet publication)

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ABSTRACT

The privatization trend affecting the state involvement in productive sectors is also challenging the role of the state in the provision of social services. And, as private participation in social sectors increases, a regulatory framework is needed to ensure that the market reaches socially efficient outcomes. The regulation of social services carries the problem of conceptualization. What is the aim of regulatory intervention in social sectors? And what is the market structure to which this regulatory constraint will be applied to? These are the questions we discuss in this paper, is devoted to analysing the role of regulation of social services in low-income countries within the so-called mixed economy of care, characterized by multiple providers: the state, the private sector, non-profit organizations.

In the first section, we describe the market failures characterizing social services that would justify government intervention as the second best option. In the second section, we present some examples on the evolution of the mixed economy of care in low-income countries, while in the third section, we analyse the behaviour of each social service provider: the state, NGOs and private for-profit organizations. In the fourth section, we present the theory of regulation applied to social services. In this section, we conceptualize the problem in two ways: first, we consider the case of procurement in the presence of asymmetric information, and second, we refer to a problem of mixed oligopoly in which the presence of the state as a provider is in itself a regulatory instrument. Conclusions close the paper.

1. INTRODUCTION

In spite of the undeniable progress in human development during the last decades, the statistics from developing countries are still worrisome. Illiteracy is widespread, particularly among women, and infant mortality rates in developing countries are several times higher than in the industrialized countries. Throughout the developing world, sizeable shares of the population do not have access to health-care facilities. So far, the goal of universal access to social services has remained elusive. Thus, a consensus is emerging about the need for uniting the efforts of civil society, the state and the market to build more equitable and sustainable systems of social provision. In other words, the social service arena is no longer perceived as solely *state business*. It has become the concern and responsibility of the society as a whole. At the same time, this multiplicity of providers calls for the development of a regulatory framework that takes into consideration the unique characteristics of social services, of the providers, and the way they interact in the market.

Regulatory practices were initially developed to offset welfare losses resulting from the operation of utilities (electricity, gas, water, etc.). Practice confirmed that unless utility operators were regulated, they would produce less output and impose higher prices on consumers. Therefore, the objective of regulatory policies was to influence the pricing and output decisions taken by different producers in a deterministic environment. Nowadays, regulation is understood in a broader way: as a way to influence private sector behaviour and to establish an appropriate incentive system to guide or constrain economic decisions (Vickers and Yarrow 1995: 79). In recent years, it has been recognized that regulators are fundamentally constrained by the lack of accurate information on the firms they regulate (Tirole 1994). Accordingly, the new theory of regulation takes into account the role of moral hazard and asymmetric information that may emerge between the regulator and the firm.

This paper is devoted to analysing the role of regulation within the so-called mixed economy of care (Wistow *et al.* 1994) that is characterized by multiple providers: the state, the private sector, non-profit organizations, etc. Information on the methods used to regulate social services in the least developed countries (LDCs) is scarce. This results partly from the fact that even though private provision of social services has grown in recent years, the attempt to 'formalize' the participation of non-state providers is quite recent. So is the perceived need for regulation. Thus, this paper attempts to

analyse the challenges that this multiplicity of providers represents to achieving efficient and equitable outcomes in the domain of social provision. Notably, we would like to explore the role of regulation in this new market configuration: the new role of the state which traditionally was solely responsible for social service provision, and, finally, to speculate on what the best approach to regulation of social markets would be.

In the second part of the paper, we present some examples of the evolution of the mixed economy of care in low-income countries. We review the market failures characterizing merit goods (basic education and health care) that would justify government intervention as the second best solution. Attention is devoted to the reasons underlying each of the aspects of government intervention: production, financing and regulation. We then refer to the application of the new theory of regulation to social services. First, we consider the case of regulation without transfers that characterize, at least in theory, the operation of private for-profit providers (private schools, private health insurance companies, etc.). Next, we consider procurement, where transfers are allowed. This situation would apply to such non-profit organizations as providers of social services. In the fifth part, we refer to the market structure to which the regulatory constraint would be applied. The presence of multiple providers with different objective functions is analysed under the framework of a mixed oligopoly, where the presence of the state as a provider among private units is in itself a regulatory instrument. We review the results of privatization and subsidization within a mixed oligopoly. Conclusions close the paper.

2. FEATURES OF NON-STATE PROVISION IN LDCs

During the last decade, the provision of key social services in developing countries has been affected by adverse macroeconomic conditions and by changes in the economic philosophy. Macroeconomic instability, eroding fiscal capacity, made it difficult for the state in developing countries to fulfil the goal of universal social service provision. In addition, changes in the economic paradigm are adding pressure to reform the system of social services. The 'welfarist' or traditional approach that gives prominence to the state in delivering and financing of quasi-public/merit goods is challenged by the 'neoliberal' approach that advocates the need to circumscribe the role of the government to that of residual provider for the extremely poor.

According to the neoliberal approach, the private sector, by relying on price mechanisms, could achieve a more efficient allocation of resources.

The creation of quasi-markets in the social service sectors, through which private sector mechanisms are transferred to the public sector, is one of the salient features of the transformation undergoing these sectors in the LDCs. The creation of quasi-markets has been accompanied by the privatization of services. In the literature on social services, privatization takes on different meanings. For the sake of clarity, we interpret the term 'privatization' to refer to the supply and to the demand side. On the supply side, privatization can be understood as the creation of new facilities owned by the private sector and/or as contracting-out existing public facilities. On the demand side, privatization implies user fees for gaining access to the service. Fees are imposed in privately owned, as well as in state facilities (which traditionally have been free of charge). In this manner, governments seek private sector involvement to obtain additional resources to finance services. It is also believed that private sector participation raises efficiency by fostering competition, meeting consumer demands and encouraging proper use of resources.

The importance of non-state provision in health and education in some developing countries (both in rural and in urban areas) is quite considerable. For example, in Cameroon non-state providers account for 40 per cent of all health facilities. In Tanzania, the church manages 40 per cent of the hospitals and non-profit organizations in Lesotho manage 50 per cent (Robinson and White 1997). In the case of education, state provision is still dominant, but enrolment in private schools varies according to the level of education. In Latin American countries, public enrolment represents on average 86 per cent of primary education and 77 per cent of secondary education in 1992 (IADB 1998).

However, imposing user fees hinders access to services, especially for the poorest segment of the population. Thus, user fees in health care have been reported to be highly exclusionary. Evidence from several case studies in African countries show that the number of patients dropped in all health-care facilities after the introduction of user fees. Moreover, fee-induced dropouts appeared to be permanent in nature (Watkins 2000; Reddy and Vandemoortele 1996). The introduction of user fees in state-owned facilities in Latin America has had similar results. On the other hand, however, Chile, Colombia and Peru have also created systems of private health insurance companies that work similarly to the American Health Maintenance Organizations (HMOs). As the Chilean experience

shows, opting out of the public health-care system can be problematic. So far, it has been very difficult to prevent private insurance companies (ISAPRES) from cream skimming (Raczynski 2000). Young, high-salary earners appear to be grossly over-insured, while middle-income earners barely manage to get a reasonable package. In case of grave illness, people have to go back to the state system, a system to which they have not contributed. Another obvious problem is that poor rural communities are not attractive for the privately-owned insurance companies and may be excluded from the system. Thus, the state—with less funding—has to care for those with the greatest needs, the poor and the elderly. Colombia, which followed Chile's example, has tried to avoid these problems by providing subsidies to private companies in order to make the provision of social services to the poor more attractive. But the results on whether this system could provide a viable and equitable alternative for providing universal health care are still inconclusive.

The privatization of educational services has been going on for some time, adding considerable pressure on households budgets. Public and private schools currently require substantive out-of-pocket contributions (e.g. entry fees, tuition, levies to parent-teacher associations, cash or in-kind donations, etc.). Not surprisingly, the burden of education fees is felt most severely in the poorest households. For instance, household surveys in Vietnam show that parents in the poorest quintile expend 22 per cent of the family's non-food income to send one child to elementary school. This is almost twice as much as in the richest quintile. At the lower secondary level, it costs the poorest households an equivalent of 45 per cent of the household income compared to 19 per cent of the wealthiest quintile. In the poorest quintile in Indonesia, direct primary school expenditures absorb 38 per cent of the average household income, compared to 17 per cent in the richest quintile (Watkins 1999). These findings are confirmed by studies conducted in Latin America. For instance, a household survey in Colombia in 1992 showed that 'household income share allocated to education is not only significant but larger for lower income groups' (IADB 1998).

Throughout the developing world, public education and health have deteriorated as a result of cuts in government spending, but they are the only alternative of the poor. Furthermore, dramatic differences exist between the educational attainment of children taught in private and public schools. Iguiñiz (1998) reports that Peruvian children in urban private schools receive on average four times more effective instruction (measured according to hours of teaching per year) than children in rural areas, and twice as much as children in urban public schools. With regard to health

services, quality is declining in public health facilities and care is rationed through a system of queuing. Proponents of the privatization of social services argue that these negative effects do not necessarily constitute weaknesses of privatization *per se*; instead, they highlight the importance of assessing the scope of competition in the incumbent markets, and of establishing regulatory mechanisms in markets where exclusion is likely to occur. In low-income countries, regulation should aim to fulfil the elusive goal of achieving universality in social services.

3. MARKET FAILURES IN EDUCATION AND HEALTH CARE

The market for such social services as basic education and health care¹ is characterized by several imperfections or *failures*. We refer to these here only briefly since they are extensively documented in the literature (see for instance, Stiglitz 1988; Mwabu, Ugaz and White 2000). It is, nevertheless, important to point out at this stage that the so-called *market failure* motivates government intervention to ensure that the market achieves socially efficient outcomes. Government intervention in the market can take the form of subsidies, direct production or regulations. In this study, we treat these forms of intervention separately. In the next section, we see how these three can be perceived as different aspects of the regulatory role of the government.

Government subsidies to education and health care are justified for at least two reasons. The first one is the presence of positive externalities. Positive externalities determine that the marginal social benefit curve is higher than the individual marginal benefit curve. In an equilibrium, market provision will be determined by the intersection between the individual marginal benefit and the marginal cost curve. However, the efficient level of service provision will be determined by the intersection of the marginal cost with the social benefit curve. This equilibrium is characterized by a higher level of services and a lower level of prices than the quantity and price determined equating the individual marginal benefit with the marginal cost. In other words, the presence of positive externalities leads to the under-provision of these services if we rely exclusively on the market, unless there is government intervention (subsidy) to compensate the difference in prices.

The second justification of government subsidies is the existence of capital market and insurance market imperfections. The returns of the investment in education are subject to uncertainty. In most poor countries, special instruments designed to finance education do not exist, and it is very difficult for individuals to access loans to pay for education, particularly at the basic level. In the case of health care, the problem is the absence of systems of health insurance that would cover the majority of the population. Therefore, in order to make these services affordable to large segments of the population, the government needs to intervene by subsidizing either the demand or the supply of these services.

Direct government provision may be justified by the fact that the provision of social services implies substantive *sunk* costs, which by definition are expenditures that cannot be recovered because the goods have no alternative use as, for instance, the purchase of medical equipment. The construction of hospitals also requires bulky initial investment that may discourage provision by the market. Furthermore, the difficulties associated with the quality-monitoring of the services, the need to professionalize education and medical care, and the difficulties associated with enforcing efficiency in the production of services all point to the government as the most 'appropriate' provider.

Regulation is commonly understood as a set of rules that aim to protect users of the services by imposing requirements on quality and standards. For instance in the case of health care, regulation takes the form of licensing practitioners and controlling medical school curricula. These regulations attempt to prevent those without sufficient knowledge from selling their services to unwary patients. In the case of education, regulation is designed to ensure that citizens acquire the basic knowledge and skills necessary to function effectively in society. Nevertheless, regulation can be better understood (and this is the approach we follow in this paper) as a *contract* between the regulator and the provider. Furthermore, social service provision can fall into the category of procurement between the principal (the state or the regulatory agency) who issues the regulatory contract and the consumer of the service. In this case, both actors (the regulator and the consumer) have the same objective function.

One obvious difficulty in establishing a regulatory contract for procurement of social services is that quality *a priori* is very difficult to assess. In the case of education, high/low quality may be blurred by individual capabilities. In the case of health care, what is considered good treatment

for one patient may be inadequate for another. Health care and education fall into the category of *experience* goods for which quality can be observed only after purchase, as opposed to *search* goods for which quality can be verified *ex-ante*. In general, a non-regulated provider has two incentives to provide high quality services: sales and reputation. When quality is observed before purchase, as in the case of search goods, poor quality discourages demand, and is detrimental to reputation. In the case of experience goods, in which quality is observed only *ex-post*, motivation to provide high quality is related to the customer repeating his/her purchase in the future. This is not applicable to surgical interventions that are assumed to be relevant only once in a lifetime. Also, the losses incurred during one year of poor quality schooling, especially at the elementary level, have very important negative consequences for the child's future.

4. THE THEORY OF REGULATION APPLIED TO SOCIAL SERVICES

Governments have fostered growth of the voluntary sector by contracting out public services and by increasing the involvement of non-governmental organizations in official development programmes (Robinson and White 1997). Also, private for-profit providers have been encouraged to operate in the market. This opening-up of the market to non-state providers is considered to be a crucial step in enforcing efficiency through competition. Within this competitive framework the government may continue to deliver some services, but its main responsibility is to ensure universal access and to regulate (Zuckerman and de Kadt 1997). At the same time, all these different organizations that co-exist in the market for social services make it more difficult to formulate a regulatory framework and to monitor its application. A fact to be taken into consideration in the design of regulatory instruments is that both private for-profit and non-profit providers differ in their approach to the provision of services. For instance, as Steinberg and Weisbrod (1996) note, for-profit providers are not directly concerned with the composition of the clientele, caring only insofar as the client mix affects their profitability. Desirable clients are always those with the greatest willingness to pay or those involving less risk. This observation has been confirmed by the experience of ISAPRES operations in Chile (see above).

In a world of perfect information, the regulator's problem is to determine the quantity of services and the price of those services in order to maximize a welfare utility function for the society. Once the solution to this problem (quantity and prices) is known, it is the task of the regulator to instruct the providers of the service—in this case non-governmental organizations and private for-profit providers—to implement that solution.

As we have seen, social services are characterized by positive externalities, and in some cases, by increasing returns to scale. Under these conditions, the marginal cost-pricing rule will produce a socially inefficient level of provision of services. Prices set at the marginal cost level will not allow providers to fully recover costs. In this situation, the regulator has two options: (i) to set prices at a level higher than marginal costs—to a level where prices equal average costs—in order to allow providers to break-even, or (ii) to subsidize the supplier to make up for the losses. The problem with subsidies is that financing the losses can entail distortions for the rest of the economy.

4.1 Regulation without transfers

We refer first to regulation applied without transfers. This situation would characterize the operations of purely private providers, such as private schools or hospitals which would not receive grants or subsidies from the state. But they would be allowed to charge consumers to recover costs and to earn some profits. The task of the regulator in this case would be either to influence the price level directly by imposing a price cap or by limiting the rate of return that the provider can earn.

4.1.1 Cost of service regulation

Under the cost-of-service regulation (COS), prices are chosen to equate total revenue to total cost. This method is known as *average cost pricing*. The regulatory authority constrains the provider to earning a certain *fair* rate of return on capital that is greater than costs but smaller than the unconstrained rate of return. This primarily results in providers producing services at greater than minimum cost and, in particular, the capital-labour ratio becoming higher than the level used by a cost-minimizing producer.

In practice, under the COS regulation, the regulator tries to calculate a *fair* rate of return for the capital or opportunity cost of the providers' invested capital. Prices are calculated on the basis of historical costs. The level of

costs plus the calculated rate of return applied to the existing capital stock determines the provider's revenue requirement (Laffont and Tirole 1993: 14). The process is complicated by the existence of several services and of price discrimination among consumers. After prices are determined, they remain fixed until the next regulatory review. Indeed, the length of time during which prices remain fixed is crucial in determining the incentive properties of COS. Uncertainty about the timing of price revisions affects the investment decision of providers. The ability of a provider to adapt to the regulatory constraint is limited, given the length of the investment-planning horizon. On the one hand, investment plans exceed the regulatory lag. On the other hand, investment in social infrastructure involves sunk costs that may be justified under the actual price level, but may not be so after prices are adjusted. Therefore, investment can be inhibited by an expectation of *unfair* future regulation.

4.1.2 Price caps

Price caps can be calculated according to different methods. According to the first, prices are fixed regardless of the cost of producing the service. But, prices will have to be sufficiently high to accommodate different providers with different cost levels. This solution implies adverse distributional consequences as some of the providers will be making positive profits. The second method is to peg prices to equal to costs, so that providers will not make a profit (allocative efficiency) but neither will there be an incentive for cost reduction (productive inefficiency). The efficiency properties of the price cap regulation depend on the assumptions made about the elasticity of demand. By assumption, demand is inelastic and set to equal one. In the case where demand is not inelastic, allocative efficiency is no longer verified.²

The third option, an intermediate solution, is to instruct the producer of services to charge according to a non-linear tariff scheme. This requires the consumer to pay a fixed fee plus an additional charge per unit of service consumed. This pricing mechanism, which includes a degree of cost sharing with the consumer, is widely used by health facilities. A patient pays a fixed fee for 'office charges' plus a certain rate according to the length of the consultation with a physician. The outcome, the two-part tariff, is more efficient than average cost pricing. Providers recover costs by charging a fee that is lower than the average cost level. The consumer surplus is higher because prices are lower and the consumer is charged according to his/her level of consumption. However, as in the case of price

caps, these results are based on restrictive assumptions concerning the demand of the services. In fact, users are not identical, as is assumed here. Those who cannot afford to pay a fixed fee drop from the market. This has been observed, for instance, with the introduction of user fees in health care in low-income and rural areas in the developing countries (Watkins 2000). In practice, there are better ways to accommodate demand, if we consider more complex structures than two-part tariffs, for instance, such as price discrimination (e.g. fees based on the patient's ability to pay or exoneration from fees for the poorest). However, this solution requires a substantive amount of information concerning the demand for the service. In most cases, this information is not available or very cumbersome to obtain. The inability to assess demand properly links this discussion to the errors of targeting (Cornia and Stewart 1995).

The optimal pricing outcome under regulation will vary in the presence of asymmetric information on the supply side. For instance, the ability of a regulator to establish the level of user charges is based on available information about the cost of providing the service. The cost function is dependent on a set of factors, which are not available to the regulator. Only the provider knows these factors, the technology used and the effort deployed to provide the service.³ The presence of information asymmetries on the supply side modifies the optimal solution explained before. On the one hand, if the regulator does not know the cost function of the provider, average cost pricing becomes problematic. On the other, if the effort level is not observable, the regulator has to provide incentives for cost reduction.

4.2 Regulation with transfers

In the case of procurement, the regulator pays the provider for delivering the service because the provider is not allowed to charge users for cost recovery. Payment is calculated according to a cost reimbursement rule which represents a degree of cost sharing between the regulator and the provider. The cost reimbursement rule can be written as:

$$t = a - bc; \quad t > 0 \text{ and}$$

Where t is the amount of transfers the provider receives (payment); b is the fraction of the cost borne by the provider, and, C is the observed unit cost. This type of payment is designed to give incentives for cost reduction. Incentive schemes that follow this rule can be of two types (extreme cases) according to the size of b (the degree of cost sharing):

(i) The cost-plus-fixed fee (usually called *cost-plus* contract) when $b=0$. This means that because the provider bears no costs, there is no incentive for cost reduction. It is a *low-powered* incentive scheme.

(ii) The *fixed-price* contract, when $b=1$. The regulator does not reimburse any fraction of the cost. The provider is paid a fixed fee. This is a *high-powered* incentive scheme.

Transfers are the tools used by the regulator to induce the provider to set prices close to the marginal cost and to reduce its rents due to the informational advantage to the minimum. In the delivery of basic social services, transfers are also justified for the reasons mentioned in the previous section. They characterize the operation of the non-profit sector. Although NGOs operate, at least in theory, under a more severe budget constraint than state agencies, they are in some cases also heavily dependent on public money. As is shown in the literature, the best way to remunerate an efficient agent (to induce maximum effort) is through a fixed fee, making it the residual claimant of the benefits of cost reduction (see Salanie 1997). In practice, however, it is very difficult to control the adverse effects of this type of incentive scheme on the quality of the services.

One of the most important issues in the design of a regulatory policy is the trade-off between the power of the incentive scheme and the provision of quality. The problem comes from the fact that the regulator has one instrument—the cost reimbursement rule—to provide the incentives needed to enhance both efficiency and quality. A high-powered incentive scheme induces cost reduction but, at the same time, increases the provider's perceived cost of delivering high-quality services (crowding-out effect). The crowding-out effect means that if quality enhancement is important, the power of the incentive scheme should be lower. Nevertheless, as advocates of the high-powered incentive schemes argue, a low perceived cost of supplying quality does not always imply a high incentive to supply it.

Table 1 summarizes the extreme cases of incentive contracts as proposed by Laffont and Tirole (1993). The table refers to the power of the incentive scheme and the possibility of a firm receiving transfers. One general caveat regarding the applicability of the regulation theory to social services in the LDCs applies to the fact that the theory is mainly concerned with the problems of asymmetric information between the regulator and providers, ignoring, for instance, the lack of information on the characteristics of the

demand. It is always assumed that users of the services are identical. Aspects like differences in the price elasticity of demand in different income brackets—important in assuring the access of poor households to services—are not taken into consideration.

TABLE 1
COMMONLY USED INCENTIVES SCHEMES

Effectiveness of the incentive	Transfers: Procurement NGOs and SOEs	No transfers: Private (for-profit) providers
Very high	Fixed-price contract	Price caps
Very low	Cost-plus contract	Cost of service regulation

Source: Laffont and Tirole (1993)

The presence of a multiplicity of providers complicates the problem of regulation. Models of regulation are based on the assumption that the regulator maximizes social welfare and the provider maximizes profits. However, as we have mentioned already, the provision of social services is being increasingly undertaken by non-profit organizations. Therefore, the robustness of the findings in terms of incentives and efficiency has to be re-assessed to include these organizations. To take this problem, albeit partially, into account, we next analyse the interaction of the state and the private for-profit units operating in the same market. Within this context, we assess in terms of efficiency the results of privatizing and subsidizing the production of services.

5. A MIXED OLIGOPOLY

It is useful at this point to conceptualize further the market in which the supply and the demand of social services take place. We have already mentioned that the provision of social services is undertaken by a multiplicity of providers: government, NGOs, voluntary and civic organizations, private for-profits, etc. Each provider is characterized by a

different objective function, known in economic theory as a mixed oligopoly.

A mixed oligopoly is a market where a homogeneous or differentiated good is supplied by a small number of firms and the objective function of at least one of them differs from that of the other firms (De Fraja and Delbono 1990: 1).

In the context of a mixed oligopoly, the private provider is supposed to maximize profits and the public provider is supposed to maximize social welfare. Authorities, in an attempt to regulate the sector (industry) internally, create in fact a mixed oligopoly. In this respect, having the state directly involved in producing the services helps to overcome the regulator's lack of information about production technology (Harris and Wiens 1980). Therefore, the problem of adverse selection between the regulator and the regulated providers will not evolve. In a more general way, as De Fraja and Delbono (1989 and 1990) point out, these models do not take into consideration agency problems, especially those emerging between the regulator and the manager of the public provider (moral hazard). These studies assume that both the regulator and managers of the public firm have the same objective function: to maximize social welfare.

In spite of these restrictive assumptions, models of a mixed oligopoly are useful in understanding the other aspects of regulation that are relevant for the provision of social services: the quantity of goods and services available in the market. The primary intention of these models is to analyse the nature of the interaction between the private and public suppliers. As in the standard theory of oligopoly, each provider knows that its actions will affect those of its competitors and has to take into consideration how they are likely to react.

The quantity of services (and the price) equilibrating the market can be determined according to different rules. The *Nash* equilibrium is achieved when each provider is doing its best, given what the other providers are doing. A particular case is the equilibrium in a duopoly (only two firms), when each provider decides how much to produce taking the quantity produced by the other as given. The equilibrium achieved this way is called a *Cournot* equilibrium. However, conclusions are modified once one of the providers is allowed to set the quantity produced first. This is the case of the *Stackelberg* model. The Cournot and the Stackelberg models are alternative ways of representing the strategic interaction between providers in an oligopolistic market.

The nature of this strategic interaction is important for the provision and financing of social services. Historically, the involvement of the state could be characterized as the Stackelberg leader: it moved first. The state produced a certain amount of services and allowed private providers to adapt their supply accordingly. More recently, the role of social service provision is inverse; private providers are supposed to lead the game and the state is supposed to play just a residual role.

However, competition among oligopolistic providers is not restricted to quantity. Price competition can also take place. The *Bertrand* model explains price setting in a duopoly. Both firms produce a homogeneous good (e.g. quality is the same between the providers) and compete by setting the price simultaneously. In this case, if the two providers charge different prices, the one producing at the lowest price will supply the entire market as this will obviously be the consumers' preference. The Bertrand competition can also result in a Nash equilibrium since both firms will do their best, given what the other firm is doing. Neither firm has the incentive to deviate from the given solution. The main criticism of the Bertrand competition is that it would be more natural to compete by setting quantities, not prices, when the goods are homogeneous. However in an oligopolistic market—and this applies to social services—there is always some degree of product differentiation.

Which, among all these possible combinations, are the options that would attain the objective of social welfare maximization in a mixed oligopoly? First of all, conclusions drawn from the mixed oligopoly models are very sensitive to the hypothesis concerning the cost functions of suppliers. And again, the applicability to social services will depend on whether we are able to characterize the cost functions of those services.

De Fraja and Delbono (1989) propose a model in which there is just one public and several private suppliers, and all agents have the same cost function. The marginal cost increases with respect to the quantity produced. De Fraja and Delbono compare four alternative behaviours of the public unit (the first two are considered 'extreme' cases). In the first scenario, the whole sector is nationalized, with the public authority deciding on the optimal number of suppliers in the market and imposing the maximum welfare function on them. In the second alternative, the public unit strives to maximize profits, and behaves therefore as a private provider would. This situation is equivalent to a *pure* (as opposed to mixed) oligopolistic situation. In the third, a Nash equilibrium is achieved in the interaction between the public supplier who strives to maximize welfare, and several

private suppliers who maximize profits. Finally, in the fourth case, the public provider acts as a Stackelberg leader, maximizing social welfare.

The paper shows that the benefits of nationalization or public monopoly are socially better than in the Stackelberg leadership solution, which in turn are socially better than in the Cournot-Nash option. However, this ranking concerns the quantity of output but it does not tell anything about efficiency. These results are explained as follows. In the case of a public monopoly, the public provider, in trying to maximize welfare, will produce a very large output at an increasing marginal cost. Thus, total costs increase, offsetting the increase in the consumer surplus due to the larger output available. The Stackelberg solution, having the public provider as the leader, is the socially preferred outcome. However, the Stackelberg result is not efficient in the sense that prices are higher than the marginal costs of the public firm.

These results are also sensitive to the hypothesis concerning the size of the private sector. It is demonstrated that the welfare levels attained in a mixed oligopoly are higher than in pure oligopoly (only private providers operate in the market) when there is a relatively small number of private units operating along with one public supplier. How realistic is this hypothesis when applied to the realm of social service provision? Regulations that ensure quality and standards prevent free entry to the market, thus it is reasonable to assume that the number of private providers will be relatively small compared with a perfect competitive market where entry is free.

5.1 Welfare effect of subsidization in a mixed oligopoly

As we have seen, social services are characterized by the presence of subsidies. How is this likely to change the results of a mixed oligopoly? White (1996) compares the results of subsidization of a pure oligopoly (all suppliers maximize profits) to the case of a mixed oligopoly (the presence of a welfare maximizing public provider persists among other profit maximizing agents).

The results in White's paper do not contradict the welfare-enhancing effect of a production subsidy under conditions of imperfect competition (1996: 189-90). The paper shows that if subsidies persist after privatization, the level of welfare remains unchanged, but if subsidies are removed after privatization, the level of welfare diminishes. How is this welfare-enhancing effect produced? The private supplier increases the level of

output when it receives the subsidy. As a consequence, the public supplier reacts by reducing its own output. The subsidy has a redistributive effect from a public producer with the higher marginal cost to a private producer with the lower marginal cost. Therefore, following this shift, there is a reduction in total costs which, *ceteris paribus*, increases welfare. A welfare maximizing government will grant subsidies to boost the overall level of output. These are important results to explore empirically in the case of social service provision because, as we have seen, the use of subsidies is widespread to encourage private participation into the market.

6. CONCLUSIONS

As capability develops, public organizations and officials will be able to take on more challenging collective initiatives, to foster markets and to make increasing use of efficient—but difficult to manage—regulatory tools.

World Bank (1997: 61)

Regulation is a complex task that requires an additional dose of capability on the side of the public administration. Regulation, the way we have presented it here, involves a wide range of activities from the most obvious of setting standards for quality, to defining pricing policies, financing providers through transfers or incurring on direct production in order to influence market outcomes, and gathering first-hand information about technology and cost of production. As Vickers and Yarrow (1995) explain, public provision does not necessarily mean inefficiency. On pure information grounds, having a system designed and run by the state can eventually lead to lower transaction costs in the case where information flows to the bureaucracy are effective. Moreover, the regulatory constraint applied to a market characterized by a multiplicity of providers may lead to a convergence of outcomes (efficiency). However, in the case of social services, all these theoretical findings need verification. Social services are characterized by special cost functions. Also, the assumptions regarding the behaviour of the demand for these services have to be carefully assessed against the empirical evidence. In addition, the presence of a multiplicity of providers adds complexity to the problem. We have seen how the literature of regulation is based on two types of organization: public, which

maximizes social welfare and private, which maximizing profits. Therefore, the robustness of the findings in terms of incentives and efficiency has to be assessed to account for the presence of non-profit organizations.

The question of what regulation should do in order to make services more accessible for the population as a whole relates undeniably to the issue of financing the services and the initial decision on whether to provide transfers to providers. In other words, it has to do with whether we conceptualize the problem as regulation or as procurement. Ideally, under a democratic regime, the regulator could very well act/represent the interests of the ultimate consumer of a service. This would hypothetically be the case of procurement. However, even in this possible scenario the problem of financing transfers will be an issue. Financing transfers relates to how distortionary taxation is and to what government revenue raising capacity is. Therefore, regulation has to be treated in a general equilibrium framework where the shadow cost of public money would be explicit.

This also relates to a broader problem which is to introduce a *contract culture* in the provision of social services. As Perri 6 and Kendall (1997) refer state contracting with voluntary organizations turns the relationship between the state and private and civic organizations from one of gift-giving and community development into a legal matter of service delivery at a price with all the implications on power relations and policies. Rothstein (1998: 207) in reference to contracts, notes '... if one cannot indicate what it is one wants, one should not be surprised to get something other than what one expects'. The capacity to regulate has to be accompanied by the capacity to enforce regulations which may require additional expertise and capacity within the state sector.

NOTES

¹ We will deal in this paper with basic education and health services as defined by UNDP 1994. These subsets of social services cover basic education (primary and secondary), primary health care and nutrition, reproductive health and family planning.

² There are differences in the scope of price cap regulation with respect to COS regulation. A price cap is meant to be forward looking, which means that: (i) the regulator does not rely on historical cost information to set the prices; (ii) the firm has downward flexibility in the prices (they could be either at the ceiling or below); and (iii)

the regulatory period is exogenous. To this family of regulations belongs the RPI-X (retail price index minus some rate of technological progress) commonly used in the regulation of utilities

³ For the sake of simplicity, we assume that there is just one level of information asymmetry, between the regulator and the provider. In practice, information asymmetries exist also at the level of the health facilities or at the level of schools, which further complicate the analysis.

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