

## **BEFORE AND AFTER PRIVATIZATION: A COMPARISON BETWEEN COMPETITIVE FIRMS**

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### ***Abstract***

The analysis regarding the results of firms privatized mainly during the Eighties within competitive sectors confirms the superiority of private control. The comparison between suitable control samples shows an improvement in profitability associated to a clear progress in labour productivity. However, for many firms, this recovery was still insufficient to guarantee an active and lasting presence on the market.

This evolution questions the functioning of the market, the selectivity of the financial operators and the incentive system used in the past as an industrial policy tool.

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## 1. Introduction

In the past, politicians talked a lot about privatizations, but little was done to achieve them. The Italian public sector still accounts for over 25% of the whole economy and plays a decisive role in some fundamental areas of the system.

In the 70's and 80's there were many privatizations by means of the sell-off of shares owned, in particular, by IRI, ENI and GEPI; in most cases however, the assignments regarded small and medium sized firms, often motivated by policies and strategies of every holding group. The situation has changed in the last few years. The pressure of the heavy state deficit, the convergence of ideologies present in many Western European countries towards a more wide-reaching private initiative, the dissatisfaction with the way of managing and the desire to find a solution to the growing mixture of politics and firm activities have given rise to a process that seems to be defining a "break" with the past.

This new direction is taking different paths: the transformation of government departments into public limited companies (for example State Monopolies), the transformation of public corporations (Enti) into public limited companies (public banks and savings banks) and the granting of public branches to public corporations (The Post Office). However, as S. Cassese (1996) points out, "the most important phases", are only at the beginning. They concern the alienation of the shares of the public corporations transformed into joint-stock companies and the definition of a public control over the strategic activities carried out by the privatized companies. Despite the delay, it must be pointed out that the transformation of public corporations into public limited companies is a fundamental basis to privatize and to limit political interference in the strategies of the firms. Furthermore, some important assignments are currently taking place (ENI), others have been concluded (STET), and an *authority* has been set up for the energy, radio-television and telecommunications sectors.

The new ways of working and the effect on the final consumer, especially with reference to privatizations, must however be evaluated carefully. International experience and the indications that emerge in particular from England can be very useful.

With regards to this subject, there is agreement on the positive contribution made by regulation on the efficiency of firms in the public sector (G. Yarrow, 1986; M. Bishop, D. Thompson, 1992) whereas there are contrasting opinions on the effects of the change of ownership. The analysis carried out by K. Hartley, D. Parker and S. Martin (1991) on 10 large English firms, including certain units that were going to

be assigned to the private sector shows an improvement in performance as control approaches the purer forms of privatization. On the other hand, the theoretical and empirical arguments put forward by Yarrow (1986) confirm the importance of regulation or competition, but questions the positive effects of a change in ownership. In particular, the analysis of productivity leads to a favourable conclusion on private property in competitive markets and a strong regulation for natural monopoly. Studies made especially in the electric and water sectors (Willner, 1996) indicate that the efficiency of the public and private operators is basically homogeneous or slightly in favour of the public sector. In a more recent work (Parker, Martin and Boussofiane, 1996), the efficiency of the 10 largest privatised firms in Great Britain were analysed, using the *data envelopment analysis* (DEA), obtaining contrasting results lacking clear evidence in favour of performances following the change of property.

It is difficult to carry out an analysis to evaluate the effects of privatization in Italy as the most important operations have just begun. Anyway, it is possible to investigate the small and medium size firms that have been transferred to the private sector and have maintained legal autonomy. They are firms operating in so-called “competitive” markets and the economic results obtained as private operators can contribute, though not extensively, to an opinion on the policies that are being implemented.

The following work is based on the analyses of the *performance* of some firms that have been privatized in the last fifteen years and is set out in the following way: Section 2 looks at the different theoretical proposals regarding privatizations and highlights the importance of competition; Section 3 describes the data base and methodological aspects; Section 4 presents the results, and Section 5 puts forward an interpretation of the situation in Italy; the conclusions end the work.

## **2. Theoretical background**

### *2.1 Public or private ownership?*

The privatization process that has been started up in the last fifteen years in Europe goes directly against the trend in the previous thirty years, when many public acquisitions were made. Many justifications were made in favour of nationalisation; in general, they were linked to the poor functioning of the market in the allocation of resources and the subsequent presence of a monopoly power in certain sectors. On the other hand the desire to follow redistributive aims pushed the governments to directly provide essential services for the economic and social systems (Chiri, 1989).

However, after years of public ownership a great amount of literature characterised by critical findings towards the role of the public sector appeared. At the same time, many studies re-dimensioned the importance of “control” as being the only explanatory variable of the quality and efficiency performance of the firms.

Buchanan (1988) pointed out that public choices, being motivated by specific distributive effects in favour of certain subjects, do not permit the facing of losses of efficiency linked to the externality towards other subjects. Considering that state intervention is expensive, as an alternative some have suggested the possibility of solving the problem of externality using market agreements (Coase, 1960) or contracts with private management (Demsetz, 1968). Others have proposed the use of regulation (Posner, 1971) or the introduction of competitive mechanisms (*franchise biddings*) when granting the management of public goods to privates (Sappington and Stiglitz, 1987).

A reduced efficiency of the public firms from empirical analyses suggests a greater complexity of the “agency contract” to the public operator and the opinion of those experts who maintain the importance of *property rights approach*<sup>1</sup>.

This theory arises from the informative asymmetries concerning the agency relationship (Arrow, 1985) that links the principal (in this case, public administration) to the agent (management of the public firm). The managers of the public firms, like those of the private ones, enjoy informative advantages and the public property would appear less efficient in order to control such a strong position. In effect, the non-transferability of public firm ownership results in less efficiency of the agents of the public firms and to “*quieter lives*” (Borcherding et alii, 1982), (Alchian and Demsetz, 1972). Furthermore, public ownership provides fewer stimuli to the innovative process, grants longer lasting contracts to directors, acts to the advantage of the voters of the winning political parties, to the advantage of the firms rather than the citizens and to an over capitalisation (De Alessi, 1974). This would not happen in the case of private ownership. The mechanisms that regulate the financial market and in particular the risk of *take-over*, with the subsequent change of the management and the possibility of failure of the firms, pushes the managers towards a more efficient behaviour<sup>2</sup>.

The non-transferability of the property and the above-mentioned observations would not seem to be sufficient to explain the weaker strength of the delegated management on behalf of the public operator. In

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<sup>1</sup> Compare the wide survey of T.E. Borcherding et alii, pg. 129-136.

<sup>2</sup> The threat of *take-over* also has negative effects. Tirole claims that the danger of hostile acquisitions leads the manager towards a shortsighted view, based on the reduction of long-term investments, creates instability in the managers' careers

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fact, it should be possible to define contractual forms in such a way as to subject the public manager to the same efficiency ties that the private operator has. According to Grosmann and Hart (1986), the importance of the form of control should be precisely attributed to the fact that it is impossible to define complete contracts (*incomplete contracts*). On the basis of the possessory title each individual will have an ex post task, of managing everything that has not been previously defined by the agency agreement. In particular, K.M. Schmidt (1996), by means of a theoretical model, shows that the Government is better informed if it owns the firm, and this situation leads it to prefer choices that reward production volumes (allocational efficiency). This takes place even if it is necessary to subsidise the structures that are particularly costly at a later date. The manager would not have much incentive in this context to save on costs (*soft budget constraint*). With privatization, the information given to the Government would be greatly reduced and therefore the chance and/or the political duty regarding any further support would cease. Consequently the manager turns out to be more responsible for efficiency management (*a harder budget constraint*) because Government support cannot be counted on. However, this process penalises allocational efficiency in favour of productive efficiency.

## 2.2 *Privatization or competition?*

Public-private dichotomy has often been associated with the competitive conditions of the markets that mainly characterise the workings of the two forms of control.

The analysis of the management of main public departments where there is no competition (public works, council services, education and healthcare) has emphasised the role of bureaucracy in the running of the public institutions (*public choice approach*)<sup>3</sup>. This theory is quite close to the one previously examined, but is different in the emphasis placed on the lack of competition regarding the public area compared to the private one. For example, Niskamen (1971) maintains that the bureaucrat, like everybody, is interested in higher pay, power and prestige. The absence of competition pushes these subjects to risk less (De Alessi, 1974), to spend a lot and to indulge the interests of the political forces. This creates a higher capital-work ratio, an excess of staff, higher wages and finally the “failure of the State” as an entrepreneur<sup>4</sup>.

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with potentially adverse behaviours regarding the firm’s interests and makes relations between the manager and workers closer, forming a coalition against the property. (Tirole, 1988, pag. 43-44).

<sup>3</sup> On the subject: T.E. Borchering et alii, in the work cited pg. 137-143.

<sup>4</sup> This expression is used by S. Chiri recalling Buchanan’s analysis (1988) regarding “Political Failure”, in the work cited, pg. 90.

More in general, in the empirical researches the trade-off between competitions and privatization seems in favour of the competition.

Several studies indicate that truly competitive markets are not clearly favourable towards private firms rather than public ones (Willner, 1996), (Chiri, 1989), (Vickers Yarrow, 1988), (Millward, 1982). Savas (1977) showed that the introduction of competition in refuse collection led to a considerable homogeneity in costs of the private and public firms. In the air transport search, Ashworth and Forsyth (1984) discovered that Air Canada proved to be the most efficient; it was the only public firm operating in a competitive market (North America).

The analysis of the privatization processes carried out at international level show that the true improvements in the performance are linked to the presence of competitive markets (Yarrow, 1986) or to the introduction of some degrees of liberalisation of the market mechanisms (Kay and Thompson, 1986). Furthermore, a study of the time series regarding the nationalised firms themselves shows that significant improvements in productivity have only been made where real competition has been introduced (Molyneux and Thompson, 1987).

### 2.3 *The role of competition*

It is widely thought that competition is preferable to monopolies because it reduces monopolistic incomes, puts pressure on costs and stimulates efficiency. As far as the studies aimed at motivating the phenomenon are concerned, Nickell (1966) notes that the analyses regarding the impact on profitability are more numerous compared to the subject of productivity. Theoretical interpretations have different links on this subject.

An initial viewpoint is based on the effectiveness of the incentive systems. The presence of incomes linked to monopolies would make life easier and less problematical both for the management and the workers, thus creating less efficiency. It is anyhow obvious that the property is not motionless and predisposes suitable tools for control as well as incentives aimed at stimulating the firm's structure. Competition however turns out to be more effective as it gives rise to a horizontal comparison of the *performance* of the firms belonging to the same business area. The theoretical works of Hart (1983), Nolebuff and Stiglitz (1983) and Mookhrjee (1984) show that the various motivating systems are more effective as the number of operators on the market increases.

A similar view arises from the possibility of an indirect comparison of the managers' performance. According to Meyer and Vickers (1995), the management's commitment towards efficiency does not mean immediate higher incomes, but increases the prestige of the firm as well as its future professional image. Competition stimulates the activity of the manager since the presence of several firms highlights passive behaviours and as a result penalises the image of the director.

A different interpretative picture gives importance to competition in that entrepreneurial activities would have a fundamental role in this context in defining the level of profitability. As competition increases, so does the number of initiatives made by the property to stimulate the manager towards efficiency. Furthermore, the efforts made by the management are emphasised because competition increases the chance of failure.

Other works indicate that as well as stimulating the manager, competition also stimulates the workers. The presence of monopolistic incomes allows trade unions to strive for higher salaries. Competition reduces profit margins and increases the *trade-off* between salaries and productivity.

As far as the empirical tests regarding the effectiveness of competition on productivity are concerned, Nickell's survey (1996) cites some examples that are not the result of rigorous "scientific" analyses but can be appreciated by all. This is the case of the low productivity in Eastern Europe compared to that in the West, the role of internal competition on the Japanese market as the key to the world success of many Japanese firms and the liberalisation of numerous productive compartments which are followed by significant improvements in productivity. The analyses containing a higher "scientific" content, link the contribution of competition to many variables that are essential for the productive system. It has been proven that concentration and other forms of monopolistic power reduce the level of innovation and technical progress. The estimate of functions relative to the productive margins has made it possible to verify that an increase in concentration reduces technical efficiency. The analysis of productivity by means of "panel data" leads to similar conclusions: the increase in market share and concentration determine a reduction in the level of total productivity. The connection with the growth production rates however yields contradictory results. The most recent estimate comes from Nickell (1996) and confirms that the increase in the number of competitors and the low income levels are linked to higher productivity development rates.



## 2.4 *The peculiarity of Italy*

Previous analyses suggest that there is another important element in the subject of privatization: the improvement of the competitive set-up by means of deregulation and the liberalisation of the market<sup>5</sup>. Privatization can lead to unsatisfactory results if, together with the change in ownership, interventions in the agency relationships and market control are not made<sup>6</sup>. For this reason some authors state that the phenomenon of privatization basically consists in making the market work (Clarkson, 1989). This opinion, though not strictly part of the subject of privatization, is important for the interpretation of the situation in Italy.

Many empirical works emphasise that Italy lacks a sufficient competition. A comparison of the behaviour of profit levels in the long run (Fraquelli, 1994) shows that Italy has the strongest correlation in the trend profits of each firm. This means a greater “persistence” in profits and at the same time a weakness in the competitive conditions. This situation, helped by direct or indirect aid provided by public administration, enables the survival of fragile firms characterized by very low competitiveness and insufficient added value per employee. M. Monti (1993), on the subject of the features of the Italian employment crisis, emphasises that productive efficiency and solidarity can exist at the same time. This goal is possible with an efficient price structure and a tax system that deals with the subject of redistribution in a suitable way. Moreover he claims that “Markets in general must be more regulated and at the same time freer: there should be greater public intervention to safeguard competition and less public intervention in the fixing of prices and quantities”. Always on the subject of “features of the current crisis”, C. Antonelli and G. Militello (1994) point out the inadequacy of the traditional industrial policy tools such as: financial benefits, support to the firms regarding demand and the tendency of public administration to aid or protect only certain industries. They suggest an improvement of the information available for the various operators and a creation of a new industrial policy. Privatization must be linked to rules aimed at guaranteeing transparency and competition among the economic operators.

Even though some (Lunghini, 1996) feel that the recovery of competition and a better regulation are no longer sufficient to guarantee development, employment and efficiency, the idea put forward by F. Gobbo (1996) is equally convincing. He claims that the lack of competition in the goods markets and the insufficient regulation in the service sector have created implicit aids to capital and work and have therefore

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<sup>5</sup> W.Wright (1996) defines the proposal of privatization as a synonym of efficiency-competition as being a “paradox”, because with nationalisation there are often significant improvements in efficiency and especially as governments committed to privatization have often imposed limits on competition.

hindered economic growth as well as contributing to unemployment. Furthermore, the weakness of the Italian industrial structure also seems to be linked to the inadequacy of the competitive mechanisms in many industrial markets.

### **3. Data set and methodological aspects**

#### *3.1 Data*

The analysis refers to the Nomisma Data Bank regarding private acquisitions from the public sector between 1978-1993 (Nomisma, 1996). The group of industrial firms identified in this way underwent further selections making a comparison with the Ceris-Panel (Margon, Sembenelli, Vannoni, 1995) that was built up upon firm data from Mediobanca and sector data from Istat. In order to analyse the effects of privatization, we considered a sufficiently long time series so as to enable a correct evaluation of the “pre” and “post” situation. Therefore 38 firms were identified, where at least six annual observations, including the three years prior to the privatizations (as well as the year shares were transferred) and the three years following privatization were available. The final selection, aimed at the availability of homogeneous time series, that had not been invalidated by mergers, demergers, or other upheavals linked to balance-sheet policies, led to a group of 20 firms (Tab. 1).

A sample useful for the comparison and normalisation of data was also identified. It is based as before on the Ceris-Panel and regards the public firms that were not privatized, firms that had always been private and firms belonging to the same industrial sector of each privatized unit. For each firm specifics “control sample” were defined based on the time series characterised by coinciding years. It should be specified that they are an “open” sample in that the averages for each year take into consideration a different number of units. In any case, the comparison is certainly significant in that the control sample has on average involved more that 40 public firms, 300 private firms and 30 firms in the group it belongs to.

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<sup>6</sup> S. Chiri, work cited pg 88.

### 3.2 Methodological aspects

An analysis of the performance for the periods prior to and following privatization required a great job of normalisation of data. As it was dealing with the time series of different periods, a process of homogenization of the indicators relative to the various firms was necessary<sup>7</sup>.

The variables of each firm were normalised by subtracting, for each specific year considered, the average of the respective variables in the control sample. If  $(X_i^t)$  is the time value  $t$  of the  $X$  variable belonging to firm  $i$  and  $(\bar{X}_c^t)$  is the average time value  $t$  of variable  $X$  for control sample  $c$ , the normalised data  $(X_{Ni}^t)$  is equal to:  $X_{Ni}^t = (X_i^t - \bar{X}_c^t)$ . Furthermore, for a comparison between variables expressed as absolute values (e.g. added value per employee) and other indicators where the absolute differences are not very significant, the percentage ratio between the data of the privatized firm and the control variable is indicated thus:  $X_{Ni}^t = (X_i^t / \bar{X}_c^t) \cdot 100$ .

Such operations have enabled the avoidance of distortions of the cycle and in part of the inflationistic phenomenon too. However, the correction is only partial in that the inflation regarding each firm is not exactly homogeneous with that of the control samples.

The normalised annual data was then grouped into two periods that precede and follow the ownership changing process and the simple period average for each variable was elaborated. The year of privatization is indicated by  $(t)$ . The comparison between the normalised values of the years prior to privatization  $(t_2, t_1, t)$  and those following privatization  $(t_{+1}, t_{+2}, t_{+3})$  were felt to be useful. On this subject, it should be remembered that the year  $(t)$  when corporate transferral takes place is often omitted in literature, because it can be subject to upheavals deriving from the transformations being made. In this case, however, this information was considered useful too, bearing the difficulty of having time series sufficiently long and considering that the analysis of the performance of the variable to time  $(t)$  does not generally present particular differences compared to years  $t_1$  and  $t_2$ .

The normalised values regarding the periods “pre” and “post” privatization therefore underwent statistical tests aimed at verifying the existence of significant differences, using the non parametrical Mann-Whitney test<sup>8</sup>.

<sup>7</sup> The methodological aspect followed a path that was in part similar to the one used by F. Guelpa (1992) for the analysis of the effects of acquisitions in Italy. F. Guelpa, work cited.

<sup>8</sup> The Mann-Whitney test is of the non-parametrical type. Apart from the probability distribution of the random variable being tested, it enables the verification of the source of two independent samples from the same population turning to the transformation in ranks of the observations.

## 4. The results

### 4.1 Profitability and industrial margins

In evaluating the performance of privatized firms it is necessary to begin the analysis from the data regarding global profitability, operating a consequent disaggregation geared towards the identification of the variables that enable an interpretation of the global data.

The comparison between the operating income and operating capital (Tab. 2) shows that the movement from public control to a private one has brought about an improvement of about 4-5 percentage points (statistically significant).

Such a result will be the subject of study following a path that involves an analysis of the operating activity of growth, productivity and financial transformations.

The set of indicators listed in table 2 highlights the different contributions of the economic variables that characterize the operating management.

The ratio between the added value and sales, compared to the “control samples”, shows a slight decrease in time. It falls from 93% to 90% with regards to public firms, is almost stable compared to the value of privatized firms and drops from 110% to 105% with regards to the single privatized units of the sector they belong to. Such a development can be linked to a reduction in margins on costs or to changes in the degree of vertical integration and cost structure. The presence of annual variations that are very limited makes it difficult to interpret the data, but, anyway, an articulated analysis of the set of variables that interact on the added value makes the second hypothesis more convincing.

With reference to the size of the added value and its composition, it is useful to explore the price conditions and efficiency in the use of productive factors. It can be seen that privatization has a positive effect on the short-term management of firms. This sign arises from the analysis of the return on sales (Operating income / Sales). The differences compared to the three control samples are practically eliminated and this progress (even though it is not statistically significant) is certainly influenced by the drop in the labour cost / turnover ratio. The latter shows a drop of about 8 percentage points compared to public firms, about 10 points compared to private firms, and about 13 points compared to the average sector values. Moreover, the parallel analysis of the average labour cost per employee shows that the latter is practically stable and structurally lower by about 18 percentage points compared to the control samples.

It is likely that this transformation has been carried out by means of a process of productive decentralization that has created a reduction of added value compared to income, but at the same time it has enabled the increase of profit share.

The development described above basically saves labour costs and is mainly associated to the quantity of production. It seems to provide further confirmation on the theories that attribute a greater effectiveness in the agency relationship between managers and private ownership. This theory can be also backed up by the higher structural impact of about 20 percentage points of labour costs on the turnover of public firms compared to private ones.

#### 4.2 *Development and productivity*

The analysis of the operating management has highlighted a considerable re-equilibrium of the margins on turnover that can be attributed to a recovery in labour productivity. However, the result is not sufficient to guarantee an adequate improvement in the performance of the Return on investment (Operating income / operating Capital) compared with the private sector and with the industry sector. Such a behaviour therefore involves an analysis of the growth process and the ways it can be carried out.

It seems clear that the change in ownership has significantly affected the strategy of the managers causing a slow-down in the growth policies of the firms. The development rate of sales (Tab. 3), that was previously above the average of the public firms and of the sector and equal to that of the private ones decreases significantly, even going a few percentage points lower than the three control samples. Probably the necessity to recover profitability pushed firm policies towards a re-organization of the existing structure. The behaviour of the sales per employee and added value per employee (Tab. 3), with an increase of about 9 points compared to the public firms and the sector and 7 points compared to the private area, confirms the improvement in efficiency. The structural gap between the public area and the private one is in any case very high. The privatized firms have absolute productivity levels that are 13 points lower than the public firms and 25 points compared to the firms that have always been private.

A further point of interest for the analysis is the ratio between turnover and the operating capital. This ratio shows the productivity of the operating capital. The lack of any improvement whatsoever compared to the initial condition is clear; the group of privatized firms have the same condition of capital productivity as the average of the public firms. Furthermore, it should be pointed out that the public sector reveals a

great structural weakness in the capital productivity, with a rate of sales per unit of operating capital lower by about 23-24 percent compared to the private sector. This situation confirms the results of international researches where it was found that the public firms are overcapitalized.

It is likely that low productivity of capital of public firms is to be linked to an excess of productive capacity, favoured also by the ease of access to credit of the public manager. However it is difficult to accept that in an efficient market the excess of capacity of the privatized firms cannot be absorbed. It is true that this process takes time, but the signs that this is happening are lacking. In short, privatized firms improve the short-term efficiency but maintain a structural gap both in labour and capital productivity.

### *4.3 Financial management*

The analysis carried out so far has been directed towards the evaluation of operating management. In order to obtain a complete picture of performance following the change of ownership it is therefore necessary to consider the financial variables too. The cash-flow rate (Tab. 4) marked by the comparison between cash-flow and sales confirms what has already been noticed: the improvement in profitability also influences the capacity for creating internal cash and therefore eliminates the gap in the cash-flow / sales ratio compared to the public firms. The gap regarding the private firms and the sector is reduced too.

The level of debts however confirms the different behaviour of the managers of the public sector compared to those in the private one. The former are “agents” characterised by low risks and therefore tend to get into greater debt compared to the private managers. The share of borrowings on the sales of the public area exceeds that of the private area by 60% (Tab. 4). Such evidence confirms the theory and previous empirical researches in Italy (Sarno, 1993); on the other hand, the level of debt of the privatized firms is hard to explain: these keep their condition of greater indebtedness compared to the firms that have always been private and regarding the sector. As was seen for the operating capital, debts also maintain a structural gap that is difficult to justify in a competitive system without distortions in the financial market.

## **5. Further studies on the changes brought about by privatization and the value of competition in Italy**

### *5.1 The process of profit convergence*

In order to study further the transformations brought about by privatizations, a disaggregation of the data was made, identifying the privatized firms that had improved or worsened their profitability (Operating Income / Operating Capital). 14 firms undergoing improvement were selected from the remaining 6 firms. The data regarding the two new groups confirm previous analyses but it must be noted that the performances are explained by the management of productivity and by the convergence of the profits in the long run. In table 5, it can be seen that a positive or negative development is not simply generated by a change in ownership; a structural convergence of income values seems to enter this process too. As time goes by, in fact, market competition pushes the firms that differ from the average values and converge towards the latter (D. C. Mueller, 1990; Ravenscraft and Scherer, 1987; Guelpa, 1992; Fraquelli, 1994). It can be noticed that the firms that are improving were below the average of the public firms whereas those that are worsening had a profitability that was higher than the public ones and practically homogeneous with the private firms and the sector they belong to.

The international comparisons give the possibility to note that the Italian process of convergence is moving very slowly and prevalently concerns margins on costs. However, accepting the presence of forces that are out of the control of the company depending on the market, the managerial activity is not secondary. The convergence process seems to have a greater impact for the group of firms with a higher profitability. In fact, the latter show a weakening of the return on sales and the rotation of the operating capital. The improvement of the group of 14 firms is on the other hand strongly influenced by the drop in the impact of the labour costs compared to the turnover and the increase in the added value per employee. Such an evolution means that policies geared towards recovering efficiency have been used.

### *5.2 The role of the new ownership*

The new property set-ups show the importance of corporate control. Within the units examined, only one firm does not belong to groups and therefore the analysis also presupposes an evaluation of the acquisition strategy by the controller.

Literature on this subject offers contradictory judgements regarding the performance of the acquired firms. The analysis based on the variation of the value of stocks following the announcement of the acquisition operation (*financial economics*) pass a favourable judgement on the process. The works of industrial economists, based on firm data and on the analysis of the market structure (*industrial organization*) cast doubts on induced wealth. They tend to emphasize the prevalence of managerial interests or simply private convenience. Guelpa's empirical research (1992) concerning the Italian situation, though presenting different interpretative values, concludes by giving priority to the growth strategy of the purchasers and to the interests of management.

The results of our analysis would seem to indicate that the substitution of public "Holdings" with private ones has affected efficiency, but has not led to a complete productive transformation. The improvement of the added value capacity is insufficient and consequently it does not contribute to an enrichment of the perspective value of the acquired firms. Making a complete judgement is not easy. The subsequent three-year period following privatization may be too short to reach a significant productive re-organization. However, it would seem fair to hypothesise that the behaviour of the controllers has been influenced by the favourable costs and subsidies for many moves to the private sector. Nevertheless, the weakness of the competitive forces may have contributed to slowing down the transformation processes.

### 5.3 *The need for further investigations about the state competition*

Despite improvements in efficiency, the privatized firms shows themselves to be weak, even compared to the public firms. The group is distinguished by a lower capacity of the added value per employee, a reduced unitary salary and a lower income per unit of invested capital. The situation remains even after a change in ownership. The activity of privates contributes to a streamlining of the work-force, but does not seem to affect production quality and value. Moreover, it should be pointed out that these firms have had the chance to benefit widely from the financial system. This situation can be found both before and after privatization. Firms, despite a reduced capacity in the production of wealth, have obtained extensive financial resources, in the form of debts.

The persistence of weaker operating conditions leads us to think that the market is hardly efficient in the allocation of resources, particularly those of a financial nature. Furthermore, the productivity gap between the firms that have always been public (mainly belonging to protected areas) and the private ones



cannot be simply attributed to the nature of agency contract, but must also be linked to market policy and the degree of competition. The individual firms examined mainly belong to areas open to external competition, but the purchasing group, as a whole, may have benefited from the same protection found for the public operators: we can remember the mechanisms of industrial policy in the Eighties based on financial and sectorial incentives and subsidies.

## **6. Conclusions**

This work has aimed at verifying the validity of the theories in favour of privatization and the necessary assumptions in order to carry it out correctly, by subjecting a group of industrial firms to analysis.

The results confirm that privatization generates a stronger motivation of the manager. The comparison with suitable control samples has shown a growth of profitability linked to a clear improvement in labour productivity. Furthermore, the relative fall in the sales growth rate after privatization shows that private manager have a minor tendency towards the development compared to the public one and a greater attention to the profitability.

In many cases, the size of the recovery however still seems to be insufficient so as to guarantee an autonomous capacity for survival within the competitive market. This situation involves the role of the control group and the value of competitive forces. The group seems to have managed the acquisition above all from a short-term viewpoint; this policy has created improvements in income but has not contributed to a long-term launch and consolidation. It is possible that such an action was favoured by the poor efficiency of the Italian market and in particular by the insufficient selectivity of the financial market and by the incentive system used in past years as an industrial policy tool.

The previous hypothesis requires a strong empirical verification submitted to further research, but enables us at this point to make some considerations that more generally concern the operations in process.

Privatization seems to lead to improvements in efficiency but in itself does not appear to be capable of leading firms towards a qualitative threshold that provides guarantees for the future. International experience shows that the latter target is not simply linked to the nature of the property but presupposes a change in the competitive game. Decisive action must be taken towards a more correct working of the

market. This means a greater transparency and information and the elimination of distortions linked to price factors or to particular demand incentives.

The problems that have been underlined seem to take on even greater importance in the current period as procedures concerning public utility privatization are being perfected. In this context, it is therefore fundamental to define a set of mechanisms and company re-organisations that favour competition. Moreover, in the presence of natural monopoly, tough regulations must be made. In short, only preventive “market liberalization” can lead to the correct privatization of the firm.

**Tab. 1 - The group of Privatized firms**

<i>Firm Name</i>	<i>Period</i>		<i>No.Employees</i>		<i>Sales (milions)</i>	
	<i>t<sub>-2</sub></i>	<i>t<sub>+3</sub></i>	<i>t<sub>-2</sub></i>	<i>t<sub>+3</sub></i>	<i>t<sub>-2</sub></i>	<i>t<sub>+3</sub></i>
Acciaierie di Modena	1978-1983		429	246	20461	46527
Acciaierie del Tirreno	1984-1989		187	214	65892	114970
Alfacavi	1979-1984		1285	825	44728	92811
Bellco	1988-1993		498	593	71983	151878
Boston	1987-1992		412	423	87480	79956
CMM Costruz.Mecc.Merid.	1981-1986		292	282	12675	24048
Ducati meccanica	1983-1988		540	381	30826	146007
I cotoni di Sondrio	1985-1990		945	476	97965	62005
Industria Adriatica Confez.	1988-1993		860	633	105335	85677
Italdata	1983-1988		384	371	25481	45234
Italtractor ITM	1988-1993		906	616	136273	141980
Loveve Sidermeccanica	1988-1993		1725	1019	147472	146000
Recordati	1983-1988		983	1009	86367	186386
Rivoira	1988-1993		561	450	102297	132293
San Giorgio Elettrodomest.	1982-1987		803	710	80547	133149
Sanremo Moda Uomo	1986-1991		1497	1027	89125	115261
Sclavo	1988-1993		1445	416	195627	93729
Simmel Ind.Meccanica	1979-1984		1394	1272	61844	269973
Star - Stabilim. Alimentare	1983-1988		2961	2332	519153	675505
Tirsotex	1986-1991		539	463	96142	58234

**Tab. 2 - Profitability of operating capital**

(Average values of privatized firms normalized with respect to the control samples)

		<i>Periods</i>	<i>Public</i>	<i>Private</i>	<i>Sector</i>
Operating margin	(a)	(t <sub>2</sub> -t)	-0,0466	-0,1125	-0,1170
Operating capital		(t <sub>+1</sub> -t <sub>+3</sub> )	-0,0091 ***	-0,0657 *	-0,0602 *
Operating margin	(a)	(t <sub>2</sub> -t)	-0,0248	-0,0307	-0,0288
Sales		(t <sub>+1</sub> -t <sub>+3</sub> )	-0,0064	-0,0082	-0,0007 **
Added value	(b)	(t <sub>2</sub> -t)	92,6066	100,6077	109,8950
Sales		(t <sub>+1</sub> -t <sub>+3</sub> )	90,2991	100,6934	104,9793
Labour cost	(b)	(t <sub>2</sub> -t)	93,1560	113,0926	120,2021
Sales		(t <sub>+1</sub> -t <sub>+3</sub> )	85,0481	103,0598	107,4030
Labour cost	(b)	(t <sub>2</sub> -t)	84,7362	83,7915	83,3849
Average Employees		(t <sub>+1</sub> -t <sub>+3</sub> )	82,9250	81,3620	80,9373

Mann-Whitney test: statistically significant to \* 1%; \*\* 5%; \*\*\* 10%

(a)  $X_{Ni}^t = (X_i^t - X_c^t)$

(b)  $X_{Ni}^t = (X_i^t / X_c^t)$

**Tab. 3 - Productivity and development**

(Average values of privatized firms normalized with respect to the control samples)

	<i>Periods</i>	<i>Public</i>	<i>Private</i>	<i>Sector</i>
Sales	(b) (t <sub>2</sub> -t)	74,4892	54,9532	64,7745
Ave. Employees	(t <sub>+1</sub> -t <sub>+3</sub> )	83,8823	62,2101	75,2456
Added Value	(b) (t <sub>2</sub> -t)	79,5869	69,3456	70,3835
Ave Employees	(t <sub>+1</sub> -t <sub>+3</sub> )	87,1753	75,8066 ***	78,6561 ***
Sales	(b) (t <sub>2</sub> -t)	98,2946	76,8002	79,4195
Net. Invested Cap.	(t <sub>+1</sub> -t <sub>+3</sub> )	100,9374	77,3041	81,8202
Δ Sales	(a) (t <sub>2</sub> -t)	0,0544	0,0081	0,0212
(L. constants)	(t <sub>+1</sub> -t <sub>+3</sub> )	-0,0358 **	-0,0212 **	-0,0178 *

Mann-Whitney test: statistically significant to \* 1%; \*\* 5%; \*\*\* 10%

(a)  $X_{Ni}^t = (X_i^t - X_c^t)$

(b)  $X_{Ni}^t = (X_i^t / X_c^t)$

**Tab. 4 - Financial management**

(Average values of privatized firms normalized with respect to the control samples)

	<i>Periods</i>	<i>Public</i>	<i>Private</i>	<i>Sector</i>
Cash-flow	(a) (t <sub>2</sub> -t)	-0,0076	-0,0339	-0,0265
Sales	(t <sub>+1</sub> -t <sub>+3</sub> )	0,0095 **	-0,0112 *	-0,0010 *
Financial Debts	(b) (t <sub>2</sub> -t)	117,3124	191,4352	173,8474
Sales	(t <sub>+1</sub> -t <sub>+3</sub> )	120,1064	178,2525	168,8870
Financial Charges	(a) (t <sub>2</sub> -t)	0,0027	0,0228	0,0180
Sales	(t <sub>+1</sub> -t <sub>+3</sub> )	-0,0001	0,0209	0,0160

Mann-Whitney test: statistically significant to \* 1%; \*\* 5%; \*\*\* 10%

(a)  $X_{Ni}^t = (X_i^t - X_c^t)$

(b)  $X_{Ni}^t = (X_i^t / X_c^t)$

**Tab. 5 - Selection of firms that are improving (14 cases) or worsening (6 cases) the ratio:  
Operating margin / Operating capital compared to the sector they belong to  
(Average values of privatized firms normalized with respect to the control samples)**

			<i>Public</i>	<i>Private</i>	<i>Sector</i>
Operating margin Operating capital	M	(i)	-0,0882	-0,1554	-0,1571
		(ii)	-0,0137	-0,0610	-0,0515
	(a)		**	*	*
		P	(i)	0,0505	-0,0123
		(ii)	0,0017	-0,0766	-0,0806
Added value Sales	M	(i)	97,4155	104,7957	106,7246
		(ii)	95,8094	106,4420	108,6787
	(b)				
		P	(i)	81,3860	90,8358
		(ii)	77,4417	87,2800	96,3476
Operating margin Sales	M	(i)	-0,0278	-0,0352	-0,0328
		(ii)	0,0021	0,0029	0,0101
	(a)			**	**
		P	(i)	-0,0179	-0,0201
		(ii)	-0,0263	-0,0342	-0,0258
Labour cost Sales	M	(i)	100,0496	120,5038	126,0379
		(ii)	89,7249	106,7343	108,1533
	(b)				
		P	(i)	77,0710	95,7997
		(ii)	74,1355	94,4859	105,6525
Sales Operating capital	M	(i)	84,0905	67,3397	70,6505
		(ii)	92,0451	70,5131	77,9484
	(b)				
		P	(i)	131,4375	98,8747
		(ii)	121,6863	93,1499	90,8544
Added Value Ave. Employees	M	(i)	71,4875	63,2505	67,6853
		(ii)	80,6084	72,9511	79,7072
	(b)			***	***
		P	(i)	98,4854	83,5675
		(ii)	102,4982	84,4695	76,2037
Borrowings Sales	M	(i)	132,3043	207,2908	192,5256
		(ii)	138,1460	192,6751	188,1341
	(b)				
		P	(i)	82,3311	154,4387
		(ii)	78,0140	144,6000	123,9771

Mann-Whitney test: statistically significant to \* 1%; \*\* 5%; \*\*\* 10%

M = group of improving firms

P = group of worsening firms

(i) = period  $t_{-2} - t$

(ii) = period  $t_{+1} - t_{+3}$

$$(a) X_{Ni}^t = (X_i^t - X_c^t)$$

$$(b) X_{Ni}^t = (X_i^t / X_c^t)$$

### Bibliography

- Alchian A.A., Demsetz H. (1972), *Production, Information Costs and Economic Organization*, in «American Economic Review», 62, pag. 777-795.
- Antonelli A., Militello G. (1994), *I caratteri della crisi in corso e la nuova politica industriale*, in «L'Industria», n. 4, pag. 597-608.
- Arrow K.S. (1985), *The Economics of Agency*, in "Agency: The Structure of Business", Pratt S.W. e Zeckhauser R., Cambridge, MA, Harvard Business School.
- Ashworth M.H., Forsyth P.J. (1984), *British Airways*, IFS Report, 12, Institute for Fiscal Studies, London.
- Bertero E., Rondi L. (1997) *Does debt discipline state-owned firms? Evidence from a panel of Italian firms*, Ceris-CNR, W.P. n. 11/1997.
- Bishop M., Thompson D. (1992), *Regulatory reform and productivity growth in the UK's public utilities*, in «Applied Economics», 24, pag. 1181-1190.
- Borcherding T.E., Pommerehne W.W., Schneider F. (1982), *Comparing the Efficiency of Private and Public Production: The Evidence from Five Countries*, in «Nationalökonomie Journal of Economics», suppl. 2, pag. 127-156.
- Buchanan J.M. (1988), *Market Failure and Political Failure*, in «Cato Journal», 1, pag. 1-14.
- Cassese S. (1996), *Le privatizzazioni in Italia*, in «Stato e Mercato», 2, pag. 323-349.
- Clarkson K.W. (1989), *Privatization and Economic Performance in Britain. A Comment*, in «Public Policy», n. 31, pag. 345-352.
- Chiri S. (1989), *Privatizzazioni: tipologia, razionalità economica, principali esperienze*, Contributi all'analisi economica, Servizio Studi Banca d'Italia, n. 5.
- Coase R.H. (1960), *The Problem of Social Cost*, in «The Journal of Law and Economics», 3, pag. 1-44.
- De Alessi L. (1974), *An Economic Analysis of Government Ownership and Regulation: Theory and the evidence from the Electric Power Industry*, in «Public Choice», n. 19, pag. 1-42.
- Demsetz H. (1968), *Why Regulate Utilities?*, in «Journal of Law and Economics», 11, pag. 55-66.
- Fraquelli G. (1994), *Concorrenza e stabilità dei profitti in Italia*, in «Politica Economica», n. 1, pag. 43-64.
- Gobbo F. (1996), *Concorrenza sviluppo e occupazione*, in Beretta S., Bianchi P, "Cambiamento delle istituzioni economiche e nuovo sviluppo in Italia e in Europa", numero speciale della rivista l'Industria, pag. 23-38.

- Grosman S., Hart O. (1986), *The Costs and Benefits of Ownership: a Theory of Vertical and Lateral Integration*, in «Journal of Political Economy», n. 94, pag. 691-719.
- Guelpa F. (1992), *Crescita esterna e performance competitive*, Nis.
- Hart O.D. (1983), *The market Mechanism as an Incentive Scheme*, in «Bell Journal Economics», n. 14, pag. 366-382.
- Hartley K., Parker D., Martin S. (1991), *Organisational Status, Ownership and Productivity*, in «Fiscal Studies», 2, pag. 46-60.
- Kay J.A, Thompson D.J. (1986), *Privatisation: A Policy in search of a Rationale*, in «The Economic Journal», 96, pag. 18-32.
- Lunghini G. (1996), *Disoccupazione e bisogni sociali*, in Beretta S., Bianchi P, "Cambiamento delle istituzioni economiche e nuovo sviluppo in Italia e in Europa", numero speciale della rivista l'Industria, pag. 39-49.
- Malyneux R., Thompson D. (1987), *National Industry Performance: Sill Third-Rate?*, in «Fiscal Studies». 1. pag. 48-82.
- Margon D., Sembenelli A., Vannoni D. (1995), *Panel Ceris su dati di impresa: aspetti metodologici e istruzioni per l'uso*, in «Working Paper Ceris-Cnr, n. 7.
- Millward R. (1982), *The comparative Performance of Public and Private Ownership*, in E. Roll, "The Mixed Economy", Macmillan, Londra.
- Monti M.(1993), *Tra efficienza e solidarietà* in «Economia e politica industriale», n. 80, pag. 53-56.
- Mookherjee D. (1984), *Optional Incentive Schemes with Many Agents*, in «Review of Economic Studies», n. 51, pag. 433-446.
- Mueller D.C. (1990), *The dynamics of company profits. An international comparison*, Cambridge, Cambridge University Press.
- Nickell S.J. (1996), *Competition and Corporate Performance*, in «Journal of Political Economy», vol. 104, n. 4, pag. 724-744.
- Niskamen W.A. (1971), *Bureauracy and Representative Governement*, New York.
- Nolebuff B.J., Stigliz S.E. (1983), *Prizes and Incentives: Towards a General Theory of Compesation and Competition*, in «Bell Journal Economics», n. 14, pag. 21-43.
- .Nomisma (1996), *Privatizzazioni 1983-1995*, in «Banca Dati, Laboratorio di Politica Industriale», Nomisma, Bologna.
- Parker D., Boussofiane A., Martin S. (1996), *The impact on technical efficiency of the UK privatisation programme*, EARIE Conference, Vienna.



- Posner M.A. (1971), *Taxation by Regulation*, in «Bell Journal of Economics and Management Science», 2, pag. 22-50.
- Ravenscraft D., Sherer F.M. (1987), *Life after take-over*, in «Journal of Industrial Economics», 2, pag. 147-56.
- Sappington D.E.M., Stiglitz J.E. (1987), *Privatization Information and Incentives*, in «National Bureau of Economic Research», W.P. n. 2196.
- Sarno D (1993), *Un'analisi comparata della performance di imprese di proprietà privata: il caso di un campione di imprese «dimesse» dalla PP.SS.*, in «Politica Economica», n. 3, pag. 367-396.
- Savas E.S. (1977), *An Empirical Study of Competition in Municipal Service Delivery*, in «Public Administration Review».
- Schmidt K.M. (1996), *The Costs Benefits of Privatization: an Incomplete Contracts Approach*, in «The Journal of Law, Economics & Organization», v. 12, n. 1.
- Tirole J. (1988), *The Theory of Industrial Organization*, The Mit Press, Cambridge, Massachusetts.
- Vickers J., Yarrow G. (1988), *Privatization: an Economic Analysis*, The Mit Press, Cambridge, Massachusetts.
- Willner S. (1996), *Privatisation of natural monopolies: A Comment*, EARIE Conference, Vienna.
- Wright V. (1996), *Privatizzazione industriale e bancararie in Europa occidentale: alcuni paradossi*, in «Stato e Mercato», n. 47, pag. 191-234.
- Yarrow G. (1986), *Privatization in theory and practice*, in «Economic Policy», 2, pag. 323-377.

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