

## The Implications of European Union for the Performance of Public Enterprises

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### INTRODUCTION

What will be the likely impact of economic integration on the performance of European public enterprises?<sup>1</sup> It is not possible to answer this question without first defining the concept of performance of a public enterprise and describing the new rules of the game that Europe is imposing on public enterprises.

So, in the first section of this paper we define the concept of performance and show how to measure it. The performance of a public enterprise is defined by its capacity to achieve the different aims assigned to it by its overseeing authority – generally the state – and it is measured by an indicator of technical efficiency. In the second section, we point out that in general, European union will grant greater autonomy to public enterprises but, at the same time, it will impose greater financial discipline on them. In the third section, we conjecture what the future holds for European public enterprises. In those countries with a high debt burden, the pressure for a return to balanced budgets will lead to a levelling of subsidies to public enterprises even where they may be defended in the name of public interest and even economic efficiency. On the basis of empirical studies relating efficiency to competition and autonomy, we believe that the performance of public enterprises ought to improve. To sum up, some public enterprises

will probably disappear; those that will survive the European challenge will doubtless be less 'public' but more efficient.

#### THE PERFORMANCE OF PUBLIC ENTERPRISES: CONCEPT AND MEASUREMENT

##### *The concept: the 'performance' approach*

Various ways exist of assessing the performance of public activities. Take the case of public transport. Users will gauge public transport in terms of price and quality, the latter depending on speed, comfort and punctuality. For the employees, what matters is wage levels, work schedules and work pace. For the public in general, fiscal and environmental issues are most relevant, as good public transport contributes to improving the quality of life and clearing urban traffic.

Such a diversity of viewpoints prevails for all kinds of activities, both public and private, but with one difference. In a private enterprise, there exists a dominant objective, that of maximum profit. Indeed, the owners of a private firm choose the ratio of price to quality which implies the highest level of profit. They surely take account of the type of market structure, institutional constraints, consumers' demand and labour market they face. Yet, the prevailing yardstick of performance is profit.

In a public enterprise, there are several objectives and the study of performance is unavoidably multidimensional. The gist of the performance approach<sup>2</sup> is that a public enterprise, as long as it is 'public', must participate in the implementation of the government's objectives in the same way as other components of the public sector. Consequently, its performance is to be evaluated by the extent to which it does in fact achieve these objectives.

Note that all the components of the public sector are not supposed to contribute equally to public policy objectives. For reasons of comparative effectiveness and of comparative ease of control, one expects that most public enterprises are not given the same redistributive mission as, say, the social security administration.

To illustrate this point, let us use an analogy, that of the public sector as a family. In hard times, everyone in a family is expected

to contribute his or her own share to make ends meet. In the same manner, in times of inflation or of unemployment, any part of the public sector should contribute within its own capacity to the restoration of price stability and full employment, if these are deemed desirable objectives of public policy and if their pursuit does not jeopardise its own existence or the achievement of other desirable objectives.

But what are the objectives that are assigned to public enterprises? These objectives, which are more generally those of public policy, can be summarised under four different headings: efficiency, equity, financial balance, and macroeconomics.

Efficiency is related to the way resources are used and goods are allocated. It can be separated into two subcomponents. First, there is technical or productive efficiency, which refers to the relationship between inputs and outputs and exists when a given output is produced by the minimum amount of inputs. Secondly, there is allocative efficiency, which refers to optimal resource allocation and which takes account of the consumers' willingness-to-pay so that there is no underproduction or overproduction.

The other three objectives can be presented more succinctly. Equity implies concern for the effects of employment and pricing policies by public firms on the distribution of real income. Financial balance could be included in macroeconomic objectives; it is often cited apart because a number of public enterprises experience big deficits and a key issue is to sort out whether these are due to mismanagement or simply to unavoidably large fixed costs. Finally, macroeconomic objectives cover a variety of problems such as unemployment, inflation, trade imbalance and stagnation, to which the government addresses itself with all its available instruments, including public production.

Such a multiobjective approach raises all sorts of questions. First, the above objectives can rarely be fulfilled simultaneously without conflict. In particular, there are known tradeoffs between efficiency and the non-allocative objectives. Thus, when ensuring the overall performance of a public enterprise, a delicate balance has to be struck. It should be noticed that the only objective the achievement of which does not impede that of the others is technical efficiency. In other words, producing too little or employing too many factors, compared to what is technically

feasible, cannot be justified in the name of any objective.

Second, the tradeoffs between allocative and non-allocative goals can have effects on the monitoring of public firms. A firm can be inefficient for two reasons: first, that it has to fulfil non-allocative objectives; and second, that it pursues objectives of its own. The difficulty in sorting out these two sources of inefficiency has often been presented as a strong argument towards privatisation or at least towards regulation. Under privatisation, the only objective given to the firm is that of efficiency.

Third, one should at last turn to the performance evaluation problem, that is, measuring how closely public firms come to achieving the objectives just listed. Theoretically, one can conceive the following scenario: first, one develops for each objective a specific indicator, and then an overall performance measure is obtained from a multicriterion combination of these indicators. Unfortunately, this is highly unrealistic in the current state of economic science and with the available data. All that can be reasonably provided is a set of indicators which deals with efficiency, the achievement of the other objectives being measured in a quite ad hoc way and then used to qualify the results.

#### *Measuring performance: technical efficiency*

Even though actual measures that are adopted in analysing the efficiency of public firms fall short of the conceptual ideal, we believe that some improvement is possible. What are the conventional indicators of efficiency in the empirical literature? One can distinguish three classes of indicators: partial and total factor productivity, average cost, and returns on capital and other financial ratios.

Factor productivity indicators can be used at one point in time but also over time to check whether the efficiency with which inputs are converted into outputs has increased or decreased. The problem with the standard productivity measures is that they are calculated on the basis of market prices and they are only meaningful when the prices reflect the true value of factors and goods. Further, conventional measures of trends in productivity do not generally account for the important distinction between technical progress and variation in technical efficiency. Only the latter is indeed the relevant indicator of improvement or worsening

of performance, relative to what is possible.<sup>3</sup>

Finally, the measures of financial soundness of public firms that are borrowed from financial analysis and accounting theory of private firms must be interpreted with much caution, particularly when these are used for firms which do not operate in a competitive environment. Failure to make this adjustment may remind one of a physician using a colleague veterinarian's instruments to treat his patients.

To sum up, conventional indicators of performance are rather unfit to measure the achievement of allocative objectives and furthermore they fall quite short of the true concept of efficiency. Is it not surprising that economists are still in a sort of stone age in this particular field whereas they are using the most advanced techniques in other fields? While we do not know the reason, the idea of measuring the performance of public enterprises has not attracted sufficient research and resources.

In our performance analysis of public sector activities, we restrict ourselves to measuring technical efficiency. This is particularly attractive for two reasons. First, it only requires physical data, which are often more available and more reliable, particularly in the case of non-market activities. Second, the results obtained can be readily interpreted. We have indicated above that there are no extenuating circumstances for a firm to be technically inefficient as this objective is compatible with all the others. In other words, measuring technical efficiency can be viewed as the first and unavoidable stage in the agenda of a performance study.

In a subsequent section, we present two performance studies based on the technical efficiency approach. The technique is rather simple; it just necessitates a good peer group of enterprises on the basis of which a best practice frontier is constructed. This could be the set of European railway companies or a sample of Belgian refuse collection firms, to mention the two cases that we shall consider. But first, before turning to these empirical studies, we examine to what extent the European integration process changes management rules of public enterprises, whether or not they are subject to competitive forces.

## EUROPEAN UNION AND PUBLIC ENTERPRISES

It is often asserted that European integration does not question the status of public enterprises. The argument developed in this section and more generally in this paper is that this process can question the economic nature if not the legal status of European public enterprises by endangering their capacity to fulfil their public interest missions.

The Treaty of Rome, as well as the Single European Act, is supposed to be unbiased with respect to the ownership of firms.<sup>4</sup> According to the philosophy of EC law, public and private firms should be treated as equals. This neutrality consequently debars public firms from both negative and positive discrimination. The aim of European Community law is simple: to avoid all obstacles to competition.

The Single European Act, signed in February 1986, is inspired by the model of the Treaty of Rome and shares the same philosophy. It aims at the achievement of a completely free internal market by eliminating physical, technical and fiscal borders.<sup>5</sup> Public enterprises<sup>6</sup> are directly and indirectly affected by this Act and EC directives. Inasmuch as they operate in the market, public enterprises must behave and be treated as any other enterprise. Discriminations pertaining to the conditions under which goods are produced and marketed are prohibited. To enforce this principle – affecting every economic sector, including utilities and public transportation – the Commission advanced directives concerning public procurement, aid to public enterprises and dominant positions.

The EC rules related to the opening-up of public procurement aim at preventing any discrimination against suppliers or firms. Public enterprises are affected by these rules for two reasons. First, they are concerned as purchasers, because these rules are fully applicable to public authorities. Second, they are concerned as tenderers, because the principle of competitive bidding prevents them from being favoured suppliers of the public sector. Given that nowadays, in the majority of cases, public authorities prefer restricted tenders or negotiations with individual suppliers to competitive biddings, these rules are likely to affect public enterprises.

The EC directives also aim at ensuring transparency in the financial relations between public firms and public authorities. The directives imply that all those who operate within the common market do so only with their own resources and at their own risk. Aid granted by a member state or through state resources which distorts or threatens to distort competition is incompatible with the common market in so far as it affects competition.<sup>7</sup>

Finally, EC rules aim at preventing any public undertaking from holding any dominant position except in sectors (such as natural monopolies) where it is technically unavoidable. In this case, the public firms' pricing cannot diverge from the production cost and the function of regulation must be independent of the production activity.

Furthermore, the Single European Act and the completion of the internal market are not the only elements implying changes in the relations between EC member states and their public firms. Economic and monetary union (EMU) makes necessary a degree of convergence of the economic conditions prevailing within the member states. This convergence imposes binding budgetary policy rules. EMU requires submission to three public spending principles: first, budget deficits cannot be financed through central banks; second, the EC and its member states do not share any responsibility for the financial liabilities of other member states; third, excessive budget deficits are forbidden. Consequently, authorised or not by the Treaty of Rome and the Single European Act, financial transfers from member states to public firms contributing to excessive deficits will no longer be possible. As the EC Commission points out 'in many member states, corrective actions should be undertaken in order to ensure sounder and above all more sustainable budgetary performance', which implies, among others, a limitation of public firms' deficits.<sup>8</sup>

#### THE FUTURE OF EUROPEAN PUBLIC ENTERPRISES

##### *Performance studies*

Most performance studies compare public and private firms operating the same activity under the same environmental setting. By necessity, they are restricted to activities where public and

private firms co-exist without necessarily competing. They include urban transit systems, water supply, financial services, insurance companies, and last but not least, refuse collection.

An historical analysis of these studies is interesting from more than one viewpoint. At first, these studies focused on the comparison between public and private firms using average cost as a yardstick. Usually but not always, the private sector appeared to perform better. Nevertheless, it appeared that such an approach was too narrow. These studies based on average cost do not measure either technical efficiency or allocative efficiency because, in most cases, market prices do not reflect the social value of inputs and outputs. Also, when analysing the comparison between public and private firms, regulation and competition should be taken into account. The regulatory settings and the market structure are indeed important factors conditioning allocative and technical efficiency.

Recent developments in the economics of information show that within a setting of uncertainty and asymmetric information (where one party to a transaction has better information than the other), competitive pressures are the most effective way to foster technical efficiency. Other studies show that efficiency is also enhanced by increased managerial autonomy. To illustrate this, we present below two studies on these subjects. One is a performance analysis of a typical public service, European railway companies that hold a monopoly position. The second is the case of refuse collection in Belgium, a public service where tendering-out can introduce competition.

#### The performance of European railways

In most European countries national railway companies are monopolies in their home market. Their performance must necessarily be analysed across countries or over time. Our data set covers the period 1961–88 and includes nineteen railway companies. Table 1 presents the results. Three indicators of efficiency – ranging from 0 to 100 – are presented for each railway company. Columns 1 and 2 give the level of technical efficiency at the beginning and at the end of the period. We can see that the evolution of the performance displays no specific pattern.

Column 3 displays the efficiency variation. Spain, the United



**Table 1: Efficiency measures in European railways**

<i>Company</i>	<i>Country</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
		<i>Technical efficiency in 1962-64<sup>a</sup></i>	<i>Technical efficiency in 1986-88<sup>a</sup></i>	<i>Efficiency change from 1962 to 1988<sup>b</sup></i>	<i>Corrected technical efficiency in 1986-88</i>
BLS	Switzerland	77.10	91.24	19.93	93.10
BR	United Kingdom	76.98	92.26	27.01	96.37
CFF	Switzerland	93.53	94.32	-0.29	99.05
CFL	Luxembourg	94.43	80.53	-14.83	90.20
CH	Greece	89.53	78.87	-12.67	92.31
CIE	Ireland	75.03	93.40	29.02	100.00
CP	Portugal	79.56	90.59	15.21	91.90
DB	Federal Republic of Germany	88.88	87.28	-2.32	91.10
DSB	Denmark	94.28	80.32	-16.16	89.65
FS	Italy	86.77	87.22	0.48	90.63
NS	Netherlands	95.96	94.36	-1.35	97.84
NSB	Norway	83.37	79.53	2.68	91.85
OBB	Austria	91.90	84.60	-5.96	95.33
RENFE	Spain	60.51	88.65	57.39	95.47
SJ	Sweden	75.08	88.33	18.61	88.22
SNCB	Belgium	92.81	89.04	-4.68	96.55
SNCF	France	93.88	93.82	0.86	95.34
TCDD	Turkey	95.77	93.98	-1.11	94.13
VR	Finland	94.50	84.83	-6.88	96.78

<sup>a</sup>Mean values over the period

<sup>b</sup>In percentage with respect to the first year

Kingdom and Ireland benefited from some noticeable productivity gains. Denmark, Luxembourg and Greece experienced a dramatic loss in efficiency.

For the most recent period (1986-88), the technical efficiency indicator was corrected in order to take into account differences in managerial autonomy. Through a survey conducted among the nineteen companies, an index of the institutional autonomy of each of them was constructed. The survey was aimed at evaluating the relations between public authorities and railway management and at assessing the nature and the extent of government intervention. We found that technical efficiency is affected by government intervention and can be fostered by increasing the autonomy of the firm's management or by relaxing the institutional

constraints to which it is subject. By neutralising the effect of differences in autonomy on efficiency, we obtained a pure managerial efficiency indicator, which appears in column 4. The resultant ranking changes have quite important implications. A company with a low autonomy index may hope to increase its uncorrected level of efficiency by obtaining more autonomy and less regulation. Take the case of the Finnish railways. On the basis of the uncorrected efficiency, it is ranked in the middle of the pack, whereas if given full autonomy, it would be ranked near the top. In other words, the problem of the Finnish railways does not appear to be its management but its regulatory environment.

#### The performance of Belgian refuse collection firms

In Belgium, the collection of household refuse is organised according to different schemes: the city itself may collect the refuse or it may contract-out the service to a private firm or to a 'municipal association'.<sup>9</sup> The service is usually but not always contracted out through competitive bidding, which is the only way to introduce competition inside this natural monopoly sector.

A survey was conducted among 176 cities in Southern Belgium (Distexhe *et al.* 1991). On the basis of the information yielded by this survey, indicators of performance were constructed according to the mode of operation and the existence of competitive bidding. It appears (see Table 2) that private firms, especially when contracted after public auction, perform best. The presence of open bids seems to matter more than the nature of ownership.

What can we deduce from these studies that are representative of many other studies in that field?<sup>10</sup> On the basis of research to date, it appears that firms' performance is quite independent of

**Table 2:** Efficiency measures of Belgian municipal services

	Total	With public auction	Without public auction
Collection by the city	55.9	—	—
Collection by a municipal association	59.7	70.7	59.1
Collection by a public firm	62.5	63.7	55.6
Total	60.5	64.1	58.0

ownership, for a given competitive and regulatory setting. What really matters is the degree of competition. Introducing competition increases performance, regardless of ownership. If this is not possible, introducing contestability (whereby there is the threat of competition if new firms are free to enter the market) and managerial freedom will serve this purpose. Privatisations are not absolutely necessary. Furthermore, some findings show that privatising without deregulating and enhancing competition leads to lower performance (Pestieau and Tulkens 1992).

#### DEFICIT AND PUBLIC SERVICE MISSIONS

According to our definition, even a public enterprise which is performing well can experience some financial losses because of large fixed costs or because it is assigned non-economic objectives. To illustrate this point, we may mention railways. In some countries, discounts are granted to specific users (veterans, elderly people, large families, etc.) for the sake of equity and some states subsidise their railways in order to promote employment or to prevent traffic jams.

These are reasons explaining why public firms may experience deficits and why states are induced to take responsibility for them. These reasons apply to all countries, independent of their public debt. However, EC unification imposes binding budgetary policy rules on member states. Countries with large public debts, such as Belgium and Italy, will be subjected to public spending restrictions preventing them from covering public firms' deficits – justified or not.

Table 3 presents, for each country of the Community, the amount of subsidies granted by governments to their railways, the financing needs of public administration and the relative share of public enterprises' employment. It is clear that in countries such as Italy and Belgium, it will no longer be possible to transfer such subsidies to their respective railways as well as to other public undertakings. In Greece, where the financing needs of public administration are huge and public enterprises staff is abundant (15 per cent of total employment), it is probable that the government will be forced to decrease the size of the public sector in order to reduce the burden of its debt.

**Table 3: Subsidies to EC railways and public deficits**

<i>Country</i>	<i>Compensations received from the state and other public bodies by the railways in 1990 (ECU 000)<sup>a</sup></i>	<i>Financing needs of public administration in 1992 (as % of GDP)<sup>b</sup></i>	<i>Share of public firms in the total wage-earning employment (agriculture excluded) in 1988 (%)<sup>c</sup></i>
Belgium	1,297,209	6.3	9.8
Denmark	—	1.5	8.5
Federal Republic of Germany	4,771,752	2.5	—
France	3,154,228	1.7	11.5
Greece	47,845	14.4	15.0 <sup>d</sup>
Ireland	108,121	4.1	11.0
Italy	8,327,467	9.4	—
Luxembourg	187,233	-2.0	4.7
Netherlands	633,119	4.1	6.0
Portugal	84,162	4.6	12.2
Spain	1,372,369	3.6	7.5
United Kingdom	1,031,922	3.6	5.0

<sup>a</sup>Source: UIC (1990)<sup>b</sup>Source: Economie Européenne (1991)<sup>c</sup>Source: CEEP (1990)<sup>d</sup>Average 1981-89

## CONCLUSION

Two main ideas emerge from this analysis. First, public firms will probably be induced to be more efficient than in the past. Second, for budgetary reasons, member states will be unable to support non-economic objectives for their public undertakings. Consequently, public firms will disappear or be privatised, not because of efficiency slacks, but because their optimal operation requires financial compensations.

Let us hope that the EC authorities quickly realise the detrimental implications of such a trend.

## Appendix: Productive efficiency comparative studies of public and private firms

Authors and sector	Number of units	Type and period of data	Number of outputs and inputs	Methods	Mean efficiency degrees	Remarks and other findings
<i>Electric utilities</i>						
Färe, Grosskopf and Logan (1985)	30 public and 123 private utility plants in US	Cross-section 1970	1 output 3 inputs	Non-parametric	95%	- Public plants have better ratings in terms of technical efficiency measures than private ones - Congestion is more a problem for public than for private utilities
Cote (1989)	62 utilities (37 private, 16 co-operatives)	Panel annual 1965-70	1 output 3 inputs	Parametric	91% (public) 86% (co-operative) 83% (private)	- Ownership or economic organisation does not seem to be related to productivity change in any significant way - The municipality and the state-owned companies display the highest efficiency values during most years
Hjalmarsson and Veiderpass (1991)	289 Swedish retail electricity distributions	Annual data 1970-86	4 outputs 4 inputs	Non-parametric	—	- Tendered services have higher efficiency scores than non-tendered ones - Technical gains can be obtained by contracting out the service to a private collector - Productive efficiency increases with biddings
<i>Refuse collection</i>						
Cubbin, Dornberger and Meadowcroft (1987)	Refuse collection in 317 local authorities	Cross-section 1984-85	10 outputs 2 inputs	Non-parametric	81%	-
Burgat and Jeanrenaud (1990)	Refuse collection in 98 municipalities in Switzerland	Cross-section 1989	2 outputs 2 inputs	Parametric and non-parametric	—	-
Distexhe (1991)	Refuse collection in 176 Belgian municipalities	Cross-section 1989	2 outputs 2 inputs	Parametric	75% (public) 72% (private)	-

## Appendix: cont.

<i>Authors and sector</i>	<i>Number of units</i>	<i>Type and period of data</i>	<i>Number of outputs and inputs</i>	<i>Methods</i>	<i>Mean efficiency degrees</i>	<i>Remarks and other findings</i>
<i>Railways</i>						
Oum and Yu (1991)	21 railway companies	Annual data 1978-88	1 output 5 inputs	Non-parametric	—	<ul style="list-style-type: none"> <li>- Managerial freedom (autonomy and government agency variables) has significant effect on efficiency</li> <li>- The dummy variable for quasi-public firms (partial private ownership) is not statistically significant</li> </ul>
Filippini and Maggi (1991)	57 private railways	Annual data 1985-88	1 output 3 inputs 2 network characteristics	Parametric	1 each year	<ul style="list-style-type: none"> <li>- Limited evidence has been found for a relationship between the share of state in capital and cost efficiency</li> <li>- Positive correlation appears between cost efficiency and the importance of the caution participation in the deficit of firms</li> </ul>
<i>Postal services</i>						
Perelman and Pestieau (1988)	21 European countries	Annual data 1975-84	1 output	Parametric	—	<ul style="list-style-type: none"> <li>- Higher technical efficiency in case of tendering out and managerial freedom</li> </ul>
<i>Financial services</i>						
Fecher and Pestieau (1992)	11 OECD countries	Annual data 1971-86	—	Parametric	—	<ul style="list-style-type: none"> <li>- Higher technical efficiency when higher competition regulation</li> </ul>

## NOTES TO ARTICLE

- <sup>1</sup> Throughout this paper, we use the term 'public enterprise' to include public services, public agencies and public administration.
- <sup>2</sup> See, e.g., Marchand *et al.* (1984).
- <sup>3</sup> Cost comparisons are usually made through the estimation of an ad hoc cost function including a dummy variable accounting for the average cost margin between public and private firms. This may be considered as too crude an approach which rests on an unsatisfactory blending of strong assumptions. In particular it postulates that either the public or the private sector, as a whole, is efficient and the other is not. The occurrence of inefficiency in both sectors, which is quite plausible, is ruled out *a priori*. For this critique, see Marchand *et al.* (1984), p. 28.
- <sup>4</sup> According to Article 222 of the Treaty of Rome.
- <sup>5</sup> See Commission des Communautés Européennes (1985).
- <sup>6</sup> European law defines a public enterprise as any undertaking, whether public or private sector, on whose economic behaviour the state can exert influence, e.g. by virtue of its direct or indirect financial participation or by legal provisions governing its establishment.
- <sup>7</sup> See Mathijsen (1990), p. 226.
- <sup>8</sup> *Economie Européenne* (1991), p. 199.
- <sup>9</sup> That is, a grouping of cities operating a particular service. This grouping is juridically independent of the cities themselves and is submitted to looser administrative and legal constraints.
- <sup>10</sup> In the appendix, we present a survey of the most recent studies on this topic.

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## Economic and Monetary Union and Public Financial Management: The Dutch 'Public Financial Revolution'

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### INTRODUCTION

The Maastricht agreements (Treaty on European Union, February 1992) place restrictions on the discretion of members as to their national budgetary policies. Each member state may follow its own microeconomic budgetary policies, may make its own decisions on allocation and equity and even on stabilisation and growth (Musgrave 1959) but macrobudgetary outcomes should stay within well-defined standards or norms. The standards for macroeconomic budgetary policy pertain to the maximum level of budget deficit and the maximum level of public debt (both as a percentage of GDP), the maximum rate of inflation and so forth. One could say that the range or field of possible outcomes has been narrowed down by these restrictions.

This paper will deal with two areas of interest which, inter alia, seem important and which did not receive much attention in the aftermath of the Maastricht agreements. In the following section I will consider a logical gap in the Maastricht agreements, the absence of a common accepted norm for the burden of taxes and other kinds of public income. Next I will address the hypothesis